



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 centre builds capacity in surveying and mapping, remote sensing, geographic information systems, and natural resources assessment and management. It has been active in SDI in Africa through contributions to the [African Geodetic Reference Frame \(AFREF\)](#) and [SERVIR-Africa](#), a regional visualization and monitoring system initiative. Other regional groups promoting SDI in Africa are [ECA/CODIST-Geo](#), [RCMRD/SERVIR](#), [RECTAS](#), [AARSE](#), [EIS-AFRICA](#), [SDI-EA](#) and [MadMappers](#)



Announce your news or information

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

This would be interesting to a colleague

PLEASE share this newsletter with anyone who may find the information useful and suggest they subscribe themselves. You can visit the [GSDI](#) website: Newsletter back issues - <http://www.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) and Karen Levoleger, kadaster (Netherlands) for their contribution to this issue of the newsletter. We acknowledge the various websites and links referred to here as sources of information.

SDI News, Links, Papers, Presentations

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



Environment Information Systems in Africa (EIS-Africa) and the Global Geospatial Data Infrastructure (GSDI) Association are organizing the combined Global Geospatial (GSDI 14) conference and AfricaGIS 2013 conference that takes place at the United Nations Economic Commission for Africa (UNECA) Conference Center in Addis Abbaba, Ethiopia from November 4-8, 2013. EIS-Africa is a pan-African membership network working to improve the use of geospatial and environmental information; and the GSDI Association is an inclusive global organization set up to promote international cooperation and collaboration in support of spatial data infrastructure developments.

UNECA is hosting the five day conference in collaboration with Addis Ababa University, the Ethiopian Mapping Agency, and the GIS Society of Ethiopia. The theme of conference is "Spatial Enablement in Support of Economic Development and Poverty Reduction", and participants will discuss the



importance of geospatial science and technology in producing affordable geospatial data sets for sustainable development in Africa.

There will be keynote speeches by leading scholars and technical sessions on the outcome of the latest research programs as well as discussion sessions on topics including capacity building, SDI, space policy and various projects as well as exhibitions of the latest products and services in geospatial science and technology.

Policy-makers, individual and corporate practitioners are scheduled to attend the conference and representatives of United Nations agencies, sub-regional, regional and international inter-governmental and non-governmental organizations as well as academic and research institutions, multi-national corporations, small and medium enterprises and civil society organizations are also expected to attend.

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>; Others: <http://www.gsdi.org/gsdiconf/gsdi14/dates.html>

President Kagame and six Heads of State discuss how ICT will drive Africa's development



In an interactive session held at Transform Africa Summit co-organised with the International Telecommunication Union (ITU), President Paul Kagame along with the Presidents of Uganda, Burkina Faso, Gabon, South Sudan, Kenya, and Mali discussed how ICT could enable development by allowing Africa to lead at the global stage.

The leaders' session began with a demonstration of the difference in speed between 4G LTE and a 3G network; the 4G reached 90mbps while the 3G was still at 0.5mbps. The difference, according to Rwanda's Minister of Youth and ICT, would allow students to livestream classes therefore being directly beneficial to student's education and the country's development.

President Kagame, speaking to participants and those watching live from across Africa and the world, said that Rwanda viewed ICT as a utility like water or electricity and investing in ICT had led to tangible gains in all sectors. "ICT has the potential to boost our economy and to improve the living standards of our people. We want to equip the African youth with these technologies and accelerate our development because we believe that success belongs to those who can innovate and those who seize the available opportunities. We are here from all sectors to forge partnerships that will benefit all our people. Let us expound on specific ways that we can leverage ICTs and work together to transform our continent during this interaction."

President Ali Bongo said that although Africa has many priorities, ICT should be a top priority: "ICT can make us take the biggest jump into the twenty first century. ICT makes information not only available but also affordable, and presents opportunities, among them e-government, e-education, e-health. I think the starting point should be education, if we are to transform the lives of Africans. That's why in my point of view, the One Laptop per Child program is very important and should be extended to all African countries and made one of the priorities of the African union."

President Salva Kiir Mayardit of South Sudan said by partnering with neighbouring countries, his country which is the newest nation in Africa, would strive to catch up with others to transform the lives of the citizens of South Sudan. President Ibrahim Boubacar Keita of Mali underscored the importance of Africans embracing ICT as a tool for transformation. "We are lucid, not asleep when it comes to what ICT can do for our lives." President Blaise Compaoré of Burkina Faso emphasized the enthusiasm and will of African leaders like President Kagame, and that this transformation led by ICT was possible.

President Uhuru Kenyatta congratulated Rwanda for the tremendous advancement in the ICT sector and said "The true and single driver that will propel us from a developing to a developed world in the shortest time possible is to recognize that the railway lines and seaways of yesterday, is broadband today. Broadband gives us the ability to leapfrog and catch up with the rest of the world. Broadband gives us the capacity to bring minds, innovation and create opportunity for our people. "

President Museveni said for ICT to be useful to people, it has to be relevant to their daily lives: "ICT must help agriculture and other fundamental sectors like industry and services for it to be a relevant tool. ICT is not only a facilitator but also a sector in itself. If we have to avoid problems, we have to integrate ICT in the entire economy, because making it a standalone sector would lead to problems."

Speaking before the leaders' session, Dr. Hamadoun Toure, the Secretary-General of the ITU pointed out that only Africans can transform Africa and that this is what the Transform Africa Summit was about: "The



leaders have dared to dream, shared their dreams with their people and it became a vision. It is time to move from mobile revolution to broadband revolution.”

Jean Philippe Prosper, Vice President of the International Finance Corporation for Sub-Saharan Africa, Latin America, and the Caribbean said IFC was committed to partnering with Africa to invest in ICT as one of the key economic drivers. He cited ICT as one of the reasons the World Bank has ranked Rwanda as one of the best places to do business in the world; Rwanda jumped from 54 to 32 in the world in 2014 rankings.

Lee Suk-chaee, the Chairman of Korea Technology, said that for Africa to finance the broadband revolution, public-private partnerships were key. “These partnerships are beneficial to everyone and will make Africa competitive at a global level.”

In 2007, Rwanda and the ITU hosted “Connect Africa”, a conference that aimed to champion broadband connectivity. Since then, broadband connectivity has greatly increased and global ICT trends are now driven by innovation that is largely boosted by Internet and mobile technology. The Transform Africa Summit aims to bring together all stakeholders to answer two key questions concerning where Africa is today in regard to resolutions set during Connect Africa in 2007 and how Africa can leverage broadband to transform communities, governments and the private sector.

Kigali summit adopts smart Africa manifesto



African countries have adopted a manifesto that seeks to ensure leaders place information and communication technology at the chore of national socio-economic development agenda. The Smart Africa Manifesto, adopted at the closure of the four-day Transform Africa 2013 Summit in Kigali is expected to transform Africa using the power of ICT.

It places ICT at the chore of socio-economic development, enhancing capacity to develop ICTs, improving accountability and transparency, putting private sector at the engine of economic transformation, and promoting cost-effective technology.

Closing the meeting, Prime Minister Pierre Damien Habumuremyi called for more commitments toward projects that will transform the continent.

He said the conference presented an excellent opportunity to meaningful engagement in high levels of dialogue to help drive innovation, create jobs, and drive sustainable development in Africa. "From this Summit, we have seen that the future can be delivered today; we must scale up our commitment toward the objectives underlined in the Manifesto. Building from the remarkable progress achieved since 2007 while leveraging broadband in our communities will drive us towards sustainable development," the premier said.

Dr Hamadoun Toure, the secretary-general of the International Telecommunication Union, reiterated the need to use ICTs in reducing poverty, creating prosperity while increasing productivity on the continent. "There is need to collaborate with the private sector and fellow African countries to continuously invest in the necessary infrastructure, including cross border and regional networks," Dr Toure said. Technology will also need to become more cost effective and protected in order to ensure sustainable achievements, Anne Githuku, the director of Afroes South Africa, said.

Seven heads of state who spoke at a panel discussion during the conference on Tuesday had earlier endorsed the pillars. Presidents Ali Bongo Ondimba of Gabon, Blaise Compaoré of Burkina Faso, Ibrahim Boubacar Keita (Mali), Salva Kiir Mayardit (South Sudan), Uhuru Kenyatta (Kenya), Yoweri Museveni of Uganda, and Paul Kagame of Rwanda said Africa should leverage the ICT to spur a pro-poor, sustainable growth. The Africa Smart Manifesto will be implemented through an alliance with the African Development Bank, World Bank, ITU and the private sector. The next Transform Africa Summit will take place in 2015.

Surveyor's workshop on transformation parameters

Eminent scholars in Surveying and Geo-information in Nigeria gathered in Abuja to find solution to the problems of transformation parameters from old Minna datum to more recent World Geodetic System (WGS 84). Speaking at the opening ceremony of a 2-day workshop on the adoption of Transformation Parameters for Nigeria, Minister of Works Architect Mike Onolememe noted that Transformation Parameter are essential database in developed and developing countries of the world because of the importance of a uniform and homogenous coordinated system in the country for seamless and consistent geospatial production.

According to him, the usage of Transformation Parameters is key to developmental activities in all sectors, adding that the prevailing situation where different sectors such as the Federal and State Government, oil and gas industry and other multinationals are using different parameter sets does not support uniform



infrastructural development and is unacceptable. "It is on record that there have been various attempts in the past on the determination of these parameters for the country. In 2012, a workshop was organized on this same issue but was inconclusive due to the recommendation for acquisition of more data to improve on the existing ones for better results,".

[Brian McClendon, co-founder and VP of Google Earth awarded top UN Environment Prize for mapping new conservation paths and creating livelihood opportunities through the green economy](#)



Brian McClendon, co-founder and VP of Google Earth is to receive the United Nation's highest environmental accolade, the Champions of the Earth Award 2013, for harnessing the power of technology to support conservation and green economic development. Mr. McClendon was recognized for providing powerful tools, through Google Earth, to monitor the state of the environment, allowing researchers to detect deforestation, classify land cover and estimate forest biomass and carbon and thus demonstrate the scale of environmental problems and illustrate solutions.

The Champions of the Earth is awarded annually to leaders from government, civil society and the private sector, whose actions have had a significant and positive impact on the environment. "With insight and information provided by partners like UNEP, the Google Earth platform is

building a living, breathing dashboard of our changing planet that will help influence policies that positively impact its future," said Brian McClendon, Vice President of Google Maps and Google Earth.

UN Under-Secretary General and UNEP Executive Director, Achim Steiner, said, "Leadership and vision will be the hallmarks of a transition to an inclusive Green Economy in developed and developing countries alike. That transition is underway and has been given fresh impetus by the outcomes of last year's Rio+20 Summit." "This year's Champions of the Earth are among those who are putting in place the actions, policies and pathways to scale-up and accelerate such transformations. As such, they are lightning rods towards a sustainable 21st Century," he added.

Working with Local Communities

In Brazil, the Surui indigenous tribe collects data on forest carbon stocks, which they map using Google Earth. Trading carbon credits is helping the community build a sustainable future. Tribe members learned to create YouTube videos, geo-tag content and upload it to a "cultural map". They use mobile phones and open data technology to record instances of illegal logging, making it easier for the public and Brazilian authorities to see where illegal activity is happening. In Indonesia, Google Earth assisted the efforts of WWF to map forest cover and wildlife ranges in Sumatra, which suffers one of the world's fastest rates of deforestation - driven by overexploitation. Over time, the <http://maps.eyesontheforest.or.id> website will provide a database of land cover, land use, and land users - using data compiled over the last decade on the ground in Sumatra. In Kenya, Save the Elephants uses Google Earth to visualize elephant tracking data from across Africa. Google Earth provides a rich mapping application to track the elephants on a moving 3D backdrop of high definition satellite images in real time. This allows the organization to monitor how elephants live, which has greatly enhanced the management and security of the elephants by boosting enforcement efforts.

In Canada, Google Earth helped the Living Oceans Society create interactive maps that educate decision-makers, the public and industries about the importance of stepping up conservation of British Columbia's coastline - home to a large diversity of marine species such as whales, orcas, salmon and sponge reefs. In the US, Google Earth was used to help rescue workers save more than 4,000 people after Hurricane Katrina. In Australia, a scientist used the tool to discover a previously unknown coral reef in a region that was marked for oil and gas development.

Mapping a Changing Environment - UNEP and Google Earth have produced a series of atlases that use a combination of ground photographs, current and historical satellite images, and narrative based on extensive scientific evidence to illustrate how humans have altered their surroundings and continue to make observable and measurable changes to the global environment. The project underscores the importance of developing, harnessing and sharing technologies that help provide deeper understanding of the dynamics of environmental change. The words and pictures within the publications also serve as a vivid reminder that this planet is our only current home, and that sound policy decisions and positive actions by societies and individuals are needed to sustain the Earth and the well-being of its inhabitants.

Other Champions of the Earth winners include: Janez Potočnik, EU Environment Commissioner; Carlo Petrini, founder of Slow Food Movement; Izabella Teixeira, Minister of Environment, Brazil; Veerabhadran Ramanathan, Professor at the Scripps Institution of Oceanography, UCSD; Jack Dangermond, ESRI, and Martha Isabel Ruiz Corzo from the Sierra Gorda Biosphere Reserve in Mexico. Read more...



Rwandapedia data web site established

Rwanda Government has launched a historical web site that archives and documents the past, present and the future events in the country. Rwandapedia breaks new ground by collecting into one place the documents, images, videos and audio recordings that together tell the story of Rwanda's development. It is funded by the African Development Bank, and showcase advances across the social, economic and governance sectors as well as key cultural and historical events in Rwanda.

Rwandapedia also grants one an opportunity to learn about the policies and programmes that have contributed to Rwanda's development, view photos dating back almost a century and watch the latest videos on Rwanda's Home Grown Solutions - a set of development programmes inspired by traditional culture and practice. It is an open platform where anyone anywhere around the world can instantly access free accurate and up-to-date information.

A team of researchers will constantly update the archive to bring you the latest statistics, interviews, photos, videos, and audio recordings from across Rwanda. The web site contains all the data across the sectors of the economy including agriculture, trade and industry, culture and the historical progress of the country.

Foreign Affairs minister and Government spokesperson Louise Mushikiwabo said the web site, www.rwandapedia.rw is an incredible project that enables showcasing the country's history, culture and progress. "This is an incredible depository," Mushikiwabo said, noting that technology has made it easy for government to achieve its obligation of driving its citizens towards prosperity.

"Rwandapedia is now a means by which Rwandans can learn and share our history because the website is Rwanda developed, managed, and owned," she said. Mushikiwabo added that there is also the need to set up another website documenting the country's history pre 1994.

Andrew Kagabo, the Girinka programme national co-coordinator, said the web site is tool where all sectors of the economy can post and share information with the rest of the world in enriching governments programmes towards economic growth. The web site is one of the few sources of information on Rwandan that researchers, planners, journalists, policy makers and the public can tap into for reliable data.

Selous ecosystem wildlife and elephant census 2013



Local and international experts gathered under the leadership of Tanzania's Ministry of Natural Resources and Tourism (MNRT) to carry out an elephant survey of the Selous Ecosystem, commencing on October 4. This census is a critical step towards boosting Tanzania's resource protection and anti poaching efforts countrywide. Recent findings illuminate the severity of the poaching crisis in Tanzania, with estimates suggesting that poaching is on the rise in various protected areas, including the Selous Ecosystem. The Selous Game Reserve is a UNESCO World Heritage site, since 1982

world famous tourist destination, and home to one of Africa's most important elephant populations. It is also one of the areas hardest hit by the poaching wave. Against the background of this alarming news, Tanzania's Ministry of Natural Resources and Tourism is taking proactive steps to address the issue.

To gain a better understanding of the current threats to Tanzania's elephant populations, national and international experts will now count the elephants in the Selous Ecosystem. As ivory poaching represents one of the major threats to wildlife in Tanzania, understanding and monitoring the distribution and population size of elephants across this ecosystem is a top priority for anti-poaching efforts.

Aerial animal censuses have been identified as the best way to obtain large mammal population numbers including elephants. Thus, an aerial census was carried out in the Selous-Mikumi Ecosystem between October 3-18, 2013. This census will establish the baseline data against which management of both areas can be measured. Pursuant to the MNRT's mandate, all wildlife surveys in Tanzania are carried out under the leadership of the Tanzania Wildlife and Research Institute (TAWIRI). TAWIRI adopted rigorous training protocols to carry out this survey under strict international standards. All observers underwent intensive training and certification; and aircraft pilots receive special training and supervision as well.

The Selous Ecosystem is well known for its abundance of wildlife, especially elephants, harbouring Africa's second largest elephant population. Within the Selous Ecosystem, the Selous Game Reserve and Mikumi National Park play an important role in wildlife-based tourism, a critical driver of Tanzania's economy. Tourism is one of Tanzania's largest foreign-income earners, providing jobs to over 600,000 people across the country. Therefore, the preservation of the Selous Ecosystem as a site for wildlife-based tourism is also an economic concern.



The MNRT is taking great strides to strengthen resource protection across the country. Under its lead, TAWIRI, which is mandated to carry out all wildlife surveys, TANAPA, which is in charge of Mikumi National Park, and the Wildlife Division, the authority responsible for Selous Game Reserve, are collaborating to monitor and evaluate the current poaching situation in Tanzania.

To conduct the Selous Survey Frankfurt Zoological Society offered assistance in organizing logistics, ground support and an aircraft for the census. The German Government through GIZ funded the Selous Ecosystem Census. International experts and organisations supporting the census with expertise include Kenya's Department of Resource Surveys and Remote Sensing (DRSRS) who sent an expert observer to take part in the census; and Save the Elephants, a Kenya-based organisation provided its expertise on the ground. The International Union for Conservation of Nature (IUCN) sent a member from their Africa Elephant Specialist Group on-site, facilitating ground efforts.

The result of such collaboration will provide credible estimates of current elephant population numbers that will help Tanzanian authorities optimize their strategies for protecting wildlife and maintaining the highest standards of monitoring and patrolling. This census displays the dedication and commitment of the Tanzanian Government, the Wildlife Division, and other parastatal organizations to address current poaching threats.

Malawi workshop: Geospatial information vital in resolving society problems



Geospatial information has been described as an effective tool to resolve environmental problems, oil and gas exploration, disaster management land and rural and urban mapping problems being experienced by society in many areas. Geospatial information is information describing the location and names of features beneath, on or above the earth's surface. At its simplest, this can mean the basic topographical information found on a map, but also includes different location-related datasets combined into complex layers that show information such as land use and population density. It supports a wide range of business, government and community activities, and

the use and re-use of this information has significant productivity-related benefits.

Principal Secretary for Ministry of Lands and Housing, Ivy Luhanga, made the remarks in Lilongwe on Tuesday when she officially opened the National Geographic Committee Symposium and Technical Workshop. She said there is need for accurate and up to date information, which is a very important component of geospatial technologies in order to address the problems. She observed that information flow has been increasing rapidly and as such, there is need for increased use of technologies if such problems are to be dealt with. "We are now living in a world where the flow of information has grown rapidly. The development brought about by the increasing use of geospatial technologies such as GIS Remote Sensing, Photogrammetric and GPS are impacting the world at large.

"In this regard, GIS, technologies which are fast emerging as effective tools to resolve problems being experienced by many in the society continue to provide a platform to integrate spatial and non-spatial information," said Luhanga. Luhanga, then, highlighted the information of intensifying efforts currently in place to promote geospatial information management and enhance greater awareness amongst policy and decision makers on the use and benefits of geospatial information. According to her, a number of government and agencies and some Non Governmental Organisations (NGOs) have some components of GIS in terms of hardware systems, software, digital data, and qualified technicians to operate the systems. She expressed concern that despite having such systems, there are missing links, which need to be filled.

"However what are commonly missing in the systems are procedures and policies that provide for the classification and standardisation of data, it's sharing and its continued revision and management. The scenarios which are prevailing in Malawi can be avoided through the development and utilisation of a National Spatial Data Infrastructure (NSDI)" said Luhanga.

Amongst sensitizing various institutions, the workshop is also expected to add value to the efforts currently underway to develop the NSDI. Regional Centre for Mapping of Resources for Development (RCMRD) Director General, Dr Hussein Farah, said in the early 90s, there were efforts to spread the concept of Spatial Data Infrastructure but faced problems like being based on donor driven and probably countries were not ready for that and the idea came before its time. "However, I believe today we have the right environment of ICT technology and learning from our past and current efforts to coordinate geospatial information," said the director general.



The workshop aimed at sensitization of sharing and dissemination of spatial data. It is was organized by RCMRD in conjunction with the Ministry of Lands and Urban Development.

Ghana: Workshop for national service personnel at lands commission

The Northern Region Lands Commission organized a one-day orientation workshop for 25 National Service Personnel posted to the Lands Commission in Tamale to equip them with the requisite information regarding what is required of them within their one year mandate with the commission. The Head of Public Vested Land Management Division (PVLMD) of the Commission, Mr. Peter Osei Owusu who took the personnel through the Vision and Mission statements as well as the Core Values of the Commission, said the Commission aims at becoming the center of excellence for Land Service delivery.

Mr. Osei Owusu said the amalgamation of some Land Sector Agencies such as the old Survey Department, Land Valuation Board and the old Land Administration under the New Lands Commission was to ensure effective and efficient land management in the country. He, therefore, urged new service personnel to demonstrate a high sense of discipline in their quest to help the Commission to effectively serve clients cautioning them against any form of corruption and lukewarm attitude to work so as to build a strong corporate image for the Commission.

On the challenges militating against the core functions of the Commission, the Northern Regional Communication and Public Outreach Officer for the Land Administration Project (LAP-2), Mr. Saaka Ahmed Mustapha disclosed that Government committed to addressing the challenges militating against efficient and effective Land Administration in Ghana. He said the reengineering process under the Phase I that witnessed some institutional reforms was part of the effort to strengthen the Lands Commission and other Land Sector Agencies to deliver quality service in order to stimulate economic growth in the country.

Mr. Mustapha added that with the support of World Bank, Canadian International Development Agencies (CIDA) and the Ghana government, Phase II of the Project seeks to deepen and consolidate the gains made in LAP-1 by making Land Sector Agencies become more responsive to clients and cutting down the cost and time of doing business. He called on the Service Personnel to work hard to change the negative perception clients have about the Commission and partner LAP-2 to achieve its intended objective so as to reduce poverty.

Other resource persons at the workshop included Head of Survey and Mapping Division of the Commission, Mr. Yaw Boateng, Mr. A. A. Nunu, the Administrator, and a representative of the Head of the Land Valuation Division of the Commission.

Practical SDI implementation materials from within and outside of Africa

Online tools decentralizing disaster relief efforts'

Disaster response and relief efforts are becoming more dynamic and decentralized with the development of web-based geospatial technologies say a study. Researchers writing in Disasters evaluated the experiences of Harvard University's Center for Geographic Analysis (CGA) during the Sichuan and Haiti earthquake responses in 2008 and 2010, respectively. They found that the conventional 'top-down' method of establishing emergency centres in damaged areas — usually managed by governments or relief agencies, to provide geographic data to decision-makers on the ground - has evolved into a more "dynamic" and "decentralized" disaster response due to the recent development of web-based geospatial technologies.

- Web-mapping technology allowed a more decentralized response to Haiti's 2010 earthquake
- Maps and images were added to the site to assist relief efforts
- Mobile phones and crowd-sourced data may help create and access crucial data faster

Such techniques started to emerge as early as 2004, in the response to the earthquake that struck Chuetsu in Japan, they say. However, it was not until the Haiti disaster that the "much broader potential" of web-based geospatial information, such as maps and images produced by crowd-sourcing responders, was revealed as a tool to allow cooperation between those inside and outside affected areas, they add.

"The technology, and also the public awareness of it, matured at that point," Wendy Guan, says one of the authors of the study. Immediately after the magnitude 7 earthquake that hit Haiti on 12 January 2010, the CGA created a website dedicated to the Caribbean country, following the experience of a first portal developed by the centre after the earthquake that occurred in Sichuan, China, in 2008.

The aim of the Haiti website was to collect geospatial data from different sources and make them available to governmental agencies, aid organizations, and researchers. "A lot of satellite imagery companies opened their archives and offered free images," says Guan. The most crucial information for rescue teams is that which allows them to know the situation both before and after the disaster, according to Guan.



CGA staff also printed a series of maps of the country's capital based on a high-resolution satellite image taken the day after the earthquake. These provided a large-scale view of roads and buildings in Port-au-Prince after the disaster. The maps were handed to a team of experts from Boston University, United States, who were travelling to Haiti for an emergency planning meeting with its government. "I don't think the website [was of much] use given the precarious condition of Internet connections in Haiti, but the maps were extremely useful," Enrique Silva, assistant professor of city planning and urban affairs at Boston University, and a member of the Boston team that travelled to Haiti. "Port-au-Prince was paralyzed and the people who had to make decisions didn't have access to the affected neighbourhoods. The maps allowed them to see what they couldn't see personally," he says.

The authors of the study recommend the creation of geospatial data sets in developing countries after disasters, not only to help emergency response efforts but also to help with long-term planning, including climate change adaptation and global warming mitigation. "Every disaster is an open lab. From public health, to equity, to economics, to environmental protection, there are many subjects that you could study if you have access to the data on the ground," Guan says. "Also, not everybody has the luxury to travel there, and even if they do, they need information to guide their activity."

The peer-produced mapping provides a number of new avenues for producing and accessing spatial data, they say, for example, mobile phones could lead to "feeding real-time data to the web-based systems, and in turn accessing the web maps for latest updates". [Link to paper's abstract](#), [Link to Haiti Earthquake Data Portal](#), [Link to Chile Earthquake Data Portal](#)

[Nigeria's CBN adopts mapping technology to leverage financial inclusion](#)

The Central Bank of Nigeria (CBN) wants to use geospatial mapping to identify access points to capture unbanked persons to achieve rapid financial inclusion. CBN Governor, Malam Sanusi Lamido Sanusi, said at the inauguration of the Geospatial Mapping of Financial Institutions on July in Lagos. The mapping was inaugurated in conjunction with the Bill and Melinda Gates Foundation (BMGF).

CBN intended to make more people use financial institutions' services and access points such as markets, motor parks, PoS (point of sale) terminals, and postal agencies. "This mapping technology will be able to provide information of where access points are". "This method is in line with our cashless policy and the Nigeria Financial Inclusion Strategy (NFIS). Financial inclusion efforts rely on data based evidence to track the progress of the NFIS. This new technology will provide information about access points within a five kilometer radius", he said.

The News Agency of Nigeria (NAN) reports that NFIS was inaugurated in October 2012 to reduce the number of adults excluded from access to financial services. NFIS aims to bridge the financially excluded adults of 46.3 per cent to 20 per cent by 2020. According to Sanusi, achieving the 2020 financial inclusion target will require the collaboration of all the stakeholders in the finance industry. "Some of such initiatives are the development of agent banking guidelines and the Know-Your-Customer (KYC) requirement to encourage financial institutions to reach out to underserved segments. Other initiatives include the development of the Consumer Protection Framework under a newly set up Consumer Protection Department and increase campaign to promote financial literacy".

GIS Tools, Software, Data

[SERVIR regional visualization and monitoring platform](#)



The evolving SERVIR regional visualization and monitoring platform is established in Africa to improve scientific knowledge and decision-making in a range of application areas (e.g., biodiversity conservation, disaster management, agricultural development, climate change adaptation, etc.).

The development started with the core ecosystems data, but quickly expanded to include additional agricultural and infrastructure data such as [Google Map Maker Roads](#) and [Open Street Map](#) roads for sub-Saharan Africa. SERVIR ended up with over thirty gigabytes of spatial data (both raster and vector) stored across multiple file and [SDE](#) geodatabases.

The site uses a combination of custom python scripts in conjunction with the ESRI ArcGIS Server 9.3.1 javascript API. Downloading data is as simple as selecting one or multiple layers, entering an e-mail address, and defining an area on the map. Because of the large file sizes, the defined areas are limited to about the



size of Mali. The system sends the user an e-mail with a download link to the server at RCMRD (Regional Center for Mapping Resources for Development) in Kenya.

The download include an ArcGIS MXD, the basic metadata and in some cases licenses. In the near future, additional non-ESRI download formats could be supported as well as increased number of data sources from RCMRD's catalog for the African spatial data. [View the prototype for the Ecosystems Clip, Zip, & Ship here.](#) See also: <https://www.serviglobal.net/Global/Articles/tabid/86/Article/603/Default.aspx>.

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.

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.

2013 GIS short courses through continued education at University of Pretoria

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

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: November and December, 2013



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

ESRI Eastern Africa GIS and remote sensing courses

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

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

University of Twente - Faculty of Geo-Information and Earth Observation (ITC): 2013-14 courses



Apply online for courses starting in the academic year 2012-2013. Browse by programme (degree, diploma, and certificate), course domain (disaster management, earth sciences, geoinformatics, governance, land administration, natural resources, urban planning, and water resources or location in the course finder at www.itc.nl/CourseFinder. For printed copy of the study brochure, email: alumni@itc.nl.

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



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

[Critical Ecosystem Partnership Fund - Biodiversity Conservation in the Eastern Afromontane Region](#)

As an element in its worldwide programs, the CEPF makes grants in support of biodiversity conservation in the Eastern Afromontane biodiversity hotspot. The current announcement is for projects in Burundi, Dem Rep Congo, Ethiopia, Malawi, Rwanda, Tanzania, Zambia, and Zimbabwe that correspond to the strategic directions indicated in the call for proposals. The deadlines for letters of interest (English, French) are 31 October 2013 for large grants (over US\$20 thousand), and 14 November 2013 for small grants.

[World Wide Fund For Nature \(WWF\) - Prince Bernhard Scholarships for Nature Conservation 2014](#)

WWF supports professional training and formal studies of individuals working in disciplines directly relevant to nature conservation. Eligibility extends to mid-career nationals from Africa; Asia and Pacific; Latin America and Caribbean; Eastern Europe; and the Middle East - including WWF staff, or candidates working as partners with WWF. The maximum grant is CHF 10 thousand for studies or training lasting one year or less. The application deadline is 11 January 2014.

[Social Science Research Council - Next Generation Social Sciences in Africa](#)

The Social Science Research Council offers fellowships to support the advancement of social science faculty in Sub-Saharan Africa toward completion of doctoral degrees in topics of peace, security, and development. Past topics have included some related to climate change and land issues. The fellowship supports 9-12 months of PhD dissertation research with grants up to US\$15 thousand. Applicants must be citizens of and reside in a Sub-Saharan African country while holding a current faculty position at an accredited college or university in Ghana, Nigeria, South Africa, Tanzania, or Uganda. The application deadline is 01 December 2013.

Employment Opportunities

FAO/UN-REDD is recruiting a REDD+ legal consultant

The UN-REDD Programme is looking for a consultant to support its activities in the field of legal preparedness for REDD+. The position is based in Rome and will involve frequent travel to developing countries. The application deadline is Wednesday 13 November 2013. The duration of the consultancy is six months, extendable.

- The FAO team of the UN-REDD Programme provides legal advisory services to countries for the development of their legal frameworks for REDD+. The consultant will support this work and perform the following tasks: Assist with the delivery of legal assistance and the facilitation of participatory law development processes in countries receiving support from FAO/UN-REDD;
- Conduct research on specific legal REDD+ related issues, particularly in the field of tenure, carbon rights, safeguards, benefit-sharing and MRV;
- Support the compilation of inputs and contributions on REDD+ legal matters from colleagues within the UN-REDD team and across the FAO;
- Prepare background documents, newsletter articles and meeting reports, and comments on materials developed by the UN-REDD Programme as needed;
- Organise events, meetings and workshops, both at global and country levels;
- Assist technical officers in liaising with external partners engaged in legal preparedness for REDD+; and Perform other duties as required.



Key requirements

- Advanced legal qualification
- Good knowledge of REDD+, climate change and forestry issues
- Experience of working with developing countries
- Excellent communication and drafting skills in English
- Fluency in French and/or Spanish an advantage

Please send a CV and cover letter to emelyne.cheney@fao.org, and francesca.feliciani@fao.org before Wednesday 13 November 2013.

Further information, contact: Simone A. Rose, Forestry Officer, Climate Change and Bioenergy, Forest Assessment, Management & Conservation Division. Tel: +39 06 570 53242, Email: Simone.Rose@fao.org

Programme Management Officer, Addis Ababa, Ethiopia

This position is located in the Strategic Planning and Operational Quality Division at the United Nations Economic Commission for Africa (UNECA). The incumbent works under the direct supervision of the Chief, Operational Quality Section. Within delegated authority, the Programme management Officer will be responsible for the following duties:

- Develops, implements and evaluates assigned programmes/projects, etc.; monitors and analyzes programme/project development and implementation; reviews relevant documents and reports; identifies problems and issues to be addressed and initiates corrective actions; liaises with relevant parties; ensures follow-up actions.
- Performs consulting assignments, in collaboration with the client, by planning facilitating workshops, through other interactive sessions and assisting in developing the action plan the client will use to manage the change.
- Researches, analyzes and presents information gathered from diverse sources.
- Coordinates policy development, including the review and analysis of issues and trends, preparation of evaluations or other research activities and studies.
- Generates survey initiatives; designs data collection tools; reviews, analyzes and interprets responses, identify problems/issues and prepares conclusions.
- Organizes and prepares written outputs, e.g. draft background papers, analysis, sections of reports and studies, inputs to publications, etc.
- Provides substantive backstopping to consultative and other meetings, conferences, etc., to include proposing agenda topics, identifying participants, preparation of documents and presentations, etc.
- Initiates and coordinates outreach activities; conducts training workshops, seminars, etc.; makes presentations on assigned topics/activities.
- Leads and/or participates in large, complex field missions, including provision of guidance to external consultants, government officials and other parties and drafting mission summaries, etc.
- Coordinates activities related to budget funding (programme/project preparation and submissions, progress reports, financial statements, etc.) and prepares related documents/reports (pledging, work programme, programme budget, etc.).

Education:

- Advanced university degree (Master's degree or equivalent) in business administration, management, economics or a related field. A first-level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of seven (7) years of progressively responsible experience in project or programme management, administration or related area. Qualifying years of experience are calculated following the receipt of the first-level university degree recognized by the United Nations.

Please apply online. Closing date: 26 November 2013.

Other

Press Release: Leaders vow to make Africa a region of competitiveness and increased well-being

The eighth annual African Economic Conference concluded on October 30, 2013 in Johannesburg, South Africa, calling on development and business leaders to turn Africa into a hub of business and development excellence. The conference, jointly organized each year by the African Development Bank (AfDB), the United Nations Economic Commission for Africa (ECA) and the United Nations Development Programme (UNDP), brought together 500





decision-makers and development practitioners. Over the three-day forum, intense discussions were held on issues including the facilitation of trade; the mobility of people, goods and services; political will and government leadership in harmonizing macroeconomic policies; and the role of the private sector in the continent's regional integration.

On the closing day of the conference, the AfDB Chief Economist and Vice-President, Mthuli Ncube, focused on knowledge and capacities, saying knowledge, strong institutions, and the management of skills and talents should be at the core of the integration agenda. He added that political leaders should double their efforts to make sure Africa becomes a tightly integrated growth pole.

Emmanuel Nnadozie, Director, Macro-Economic Policy Division, ECA, recalled the modest beginning of the AEC, which today gathers young African researchers and has become a key platform for knowledge sharing. He also stressed the importance of the platform for building the capacity for economic analysis on the continent. "We aspire to help young people to be part of that analysis," he said.

Focusing on the human development impact of integration, Pedro Conceição, Head Economist for UNDP's Regional Bureau for Africa, said, "there is a need for mechanism of solidarity within Africa, countries needs to share resources as well as knowledge and other aspect of growth."

Speaking two days earlier, AfDB President Donald Kaberuka said regional integration has well-known benefits but is not advancing as quickly as it should. "Progress to date is encouraging, but highly variable. Where the pace is right, the results are beginning to show: almost everywhere tariffs are no longer the big issue, but non-tariff restrictions remain a real impediment."

Abdalla Hamdok, Deputy Executive Secretary of ECA, said, "Economic transformation will ensure that Africa makes optimal use of its human and natural resources, bringing about a shift in the sectoral composition of its economies, in favour of high productivity sectors, especially manufacturing and modern services."

African Union Commission Chairperson Nkosazana Dlamini Zuma said "Leadership on regional integration should therefore happen, not only at the government level, but at all levels of African society and all institutions – whether business, civil society or private sector." For his part, the South African Finance Minister Pravin Gordhan emphasized the need for African countries to assert themselves in the ongoing global power shift. "Too often we are in these global meetings, but with minor voices and inability to project with a common agenda for what we want to achieve ourselves and in the global agenda," he said, calling for deeper regional integration. Gordhan said the continent has an opportunity to offer alternative models of development and can create development models that are appropriate for their respective countries. Distributed by APO (African Press Organization) on behalf of the African Development Bank (AfDB).

[IPCC Report - A bold move vital to stop climate change](#)



After several years of work by over 800 scientists the Intergovernmental Panel on Climate Change (IPCC) has presented its fifth assessment report on climate change. According to the report, warming of the climate system is unequivocal and unprecedented.

The key message is unambiguous; human influence has been the dominant cause of the observed warming since the mid-20th century humans cause climate change, and the burning of fossil fuels is the main reason behind a 40 percent increase in carbon-dioxide concentrations since the industrial revolution. Other findings of the latest IPCC report include global temperatures

are likely to rise by 0.3 to 4.8 degrees Celsius by the end of the century; and, sea levels are expected to rise a further 26-82 centimeters by the of the century.

But the gravity of the IPCC report has run into a significant PR headwind. The call for urgent action seems diminished by what seems to be a slowing down or a hiatus in global warming. Scrutinizing the global temperature curves between 1850 and 2012, detractors have chosen to focus on the "wiggles" toward the end of the time series. These "wiggles" have emboldened climate change deniers to claim that there has been a slowing down in global warming, which has lasted 15 years. A paper published in the current issue of the Nature Climate Change journal nearly all of the one hundred climate-model simulations they examined overestimated global warming over the past 20 years. The discrepancy between observed and simulated warming is more striking over the past 15 years (1998-2012) where the actual average warming trend per decade, 0.05 degrees Celsius, is more than four times smaller than the average simulated trend per decade.

To its credit, the IPCC report recognizes the hiatus and notes that global mean surface temperature exhibits substantial decadal and interannual variability. Authors of the IPCC's fifth assessment report observe that trends based on short records are very sensitive to the beginning and end dates and do not in general reflect



long-term climate trends. But skeptics see the hiatus as evidence that the IPCC concerns are overblown. The skeptics have also pointed to the fourth assessment by IPCC in 2007, which exaggerated the rate of melting of glaciers in the Himalayas and overstated risk of floods in the Netherlands.

As people trained in the science we do not know as much as we claim about how our planet's climate works. Global warming, and especially its effects on our planet, is a lot more complicated than we have assumed. More importantly, because of the complex interactions and feedback there is no simple relationship between greenhouse gas emissions and global warming. This not to say that loading up our atmosphere with water vapor carbon dioxide, methane and nitrous oxide does not trap long wavelength radiation, leading to warming of our planet.

The physical science basis of climate change is not in doubt. And just like previous IPCC reports, the fifth assessment that was released makes this even clearer. The point is that the effect of greenhouse gases on the earth's climate is mediated by complex interactions, producing feedback, which we do not yet fully understand and are unable to model well. Hence, it is possible that our rather simplistic models will often overestimate global warming.

Science in its current state can predict accurately surface temperature increases over the course of the next decade, let alone a century. Global surface temperatures could increase by 0.5 degrees Celsius or by 4.5 degrees Celsius. The point is, the magnitude of warming as well as its impact is surrounded by significant uncertainty and simply beyond the current capability of science to determine with certainty.

Doubt and skepticism is the lifeblood of science, and at the heart of scientific discovery and innovation. But politics, policy and public opinion are predicated on the illusion of the so-called facts. Hence, uncertainty is a social anathema. But uncertainty over the magnitude of global temperature rise and the scale of associated impact must not be taken as the tranquilizing drug for inaction. Uncertainty is an essential characteristic of human induced climate change and hence the *raison d'être* for mitigating action. We know enough to act to forestall dangerous warming. The critical response to global warming must be driven by moral accountability to posterity, not narrow national politics, and economic calculus.

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

Conferences, Events

Date	Location	Event
November 2013		
04-08 November 2013	Adis-Ababa, Ethiopia	<u>GSDI 14 World Conference and AfricaGIS 2013 Conference</u>
06-08 November 2013	Butare, Rwanda	<u>6th National University of Rwanda (NUR) International Scientific Research Conference 2013</u> Contact: nurconference2013@nur.ac.rw
10-16 November 2013	RCMRD, Nairobi, Kenya	<u>RCMRD Governing Council</u>
11-22 November 2013	Warsaw, Poland	<u>19th Session of the Conference of the Parties to the UNFCCC (COP 19)</u> Email: secretariat@unfccc.int
16-17 November 2013	Warsaw, Poland	<u>Global Landscapes Forum</u> Email: a.neureuther@cgiar.org
18 November 2013	Africa	African Statistics Day - Organized by UN Commission for Africa and African Centre for Statistics.
19-21 November 2013	Nairobi Kenya	<u>Regional Conference of the International Network of Women Scientists and Engineers (INWES)</u> . See http://www.aawse.org/images/stories/docs/inwes_2013_final.pdf
19-22 November 2013	Nairobi, Kenya	<u>Fifth Annual International Conference of Crisis Mappers (ICCM 2013 Nairobi)</u>
25-30 November 2013	Libreville, Gabon	<u>49th Session of the International Tropical Timber Council (ITTC) and the Associated Sessions of the four Committees (Finance and Administration, Economic Information and Market Intelligence, Forest Industry, and Reforestation and Forest Management)</u>



December 2013		
28-31 December 2013	CRRAO AIMSCS, Hyderabad	<u>Statistics 2013: Socio-Economic and Sustainable Challenges and Solutions</u>
2014		
10-14 February 2014	Delhi, India	<u>World Congress on Agroforestry 2014 (WCA2014)</u>
25-30 May 2014	Cancun, Mexico	<u>46th GEF Council Meeting and GEF Assembly</u> Contact: <u>secretariat@thegef.org</u>
8-14 June 2014	Jeju ICC, Korea	<u>20th World Congress of Soil Science (WCSS)</u>
15-21 June 2014	Riviera, Bulgaria	<u>5th Jubilee International Conference on Cartography & GIS & Seminar with EU cooperation on Early Warning and Disaster/Crisis Management</u>
14-19 July, 2014	Nairobi, Kenya	The African Association of Women in Geosciences (AAWG), <u>7TH Conference - Earth Sciences and Climate Change: Challenges to Development in Africa</u>
2014	Jamaica	<u>CIF 2014 Partnership Forum and Associated Meetings</u> Contact: <u>cifevents@worldbank.org</u>
2015	Durban, South Africa	<u>14th World Forestry Congress for South Africa</u>
1-31 August 2016	Cape Town, South Africa	<u>35th International Geological Congress</u>

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

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