

Spatial Data Infrastructure – Africa Newsletter



SDI-Africa Newsletter

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Spatial Data Infrastructure - Africa (SDI-Africa) is a free, electronic newsletter for people interested in GIS, remote sensing, and data management in Africa. Published monthly since May 2002, it raises awareness and provides useful information to strengthen SDI efforts and support synchronization of regional activities. [ECA/CODIST-Geo](#), [RCMRD/SERVIR](#), [RECTAS](#), [AARSE](#), [EIS-AFRICA](#), [SDI-EA](#), and [MadMappers](#) are some of the other regional groups promoting SDI development.

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The SDI-Africa newsletter is prepared for the GSDI Association by the [Regional Centre for Mapping of Resources for Development \(RCMRD\)](#) in Nairobi, Kenya. RCMRD builds capacity in surveying and mapping, remote sensing, geographic information systems, and natural resources assessment and management. RCMRD has been active in SDI in Africa through its contributions to the [African Geodetic Reference Frame \(AFREF\)](#) and [SERVIR-Africa](#), a regional visualization and monitoring system initiative. RCMRD also implements projects on behalf of its member States and development partners.



If you have news or information related to GIS, remote sensing, and spatial data infrastructure that you would like to highlight (e.g., workshop announcements, publications, reports, websites of interest, etc.), kindly send them in by the 25th of each month. I'd be happy to include your news in the newsletter.

PLEASE share this newsletter with colleagues who may find the information useful and suggest that they subscribe themselves.

Back issues of the newsletter are at the GSDI website: <http://www.gsdi.org/newsletters.php>
Best regards, Gordon Ojwang, Editor, [SDI-Africa AT gsdi.org](mailto:SDI-Africa_AT_gsdi.org) or sdiafrica@rcmrld.org or gojwang@rcmrld.org



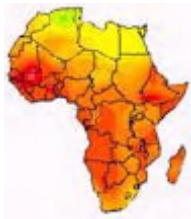
Input to this Issue

Thank you to Kate Lance, NASA/SERVIR-Africa (USA), Hussein Farah, RCMRD (Kenya) and all sources of information referred for their contributions to this issue of the newsletter.

SDI News, Links, Papers, Presentations

[Investor plans rescue of abandoned orbiting satellites](#)

At this moment, over 6,000 satellites are orbiting the earth. In a couple of years, an estimated 2,000 of that number will run out of fuel, becoming obsolete, thereafter being resigned to spending eternity whizzing around earth. Satellites have an operating life span of between five and 20 years. This means that many "die" after living fruitful lives going around the earth. It's a thought of little consequence to many of us as we enjoy the continuing march of technology, but the fate of old satellites that power communication around the world is the problem that is - literally - filling space. There are currently 500,000 disused man-made objects in the earth's atmosphere. The International Space Station which is several kilometres wide is the largest man-made satellite currently in orbit around the Earth. Some satellites, called microsats, nanosats, or picosats, can be as small as three inches in diameter and weighing in at 0.1 kg in mass. As of 2008, the former Soviet Union and Russia had nearly 1,400 satellites in orbit, the USA about 1,000, Japan more than 100, China about 80, France over 40, India more than 30, Germany almost 30, the UK and Canada 25, and at least 10 each from Italy, Australia, Indonesia, Brazil, Sweden, Luxembourg, Argentina, Saudi Arabia, and South Korea. As space technology matured, satellites were launched for military and commercial purposes. The



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price of satellite launches has dropped to as low as a few million dollars for light ones, and a few tens of millions for heavy satellites. This puts the technology within the reach of many nations and international companies. Apparently, there are more satellites than you can shake a stick at up there.

An enterprising entrepreneur has figured out the best way to save them: build a space service station. Loosely fashioned around the petrol station concept, the space stations will give new life to satellites, meaning that we can cut down on space waste in the future. Daniel Friedmann, the CEO of MacDonald Dettwiler and Associates Ltd wants to build the high-tech equivalent of a service station, load it up with fuel and spare parts, and launch it into orbit to come to the aid of aging satellites. "This is the last human infrastructure that has no service industry," Friedmann said in an interview with the Globe and Mail at his company's Spartan suburban Vancouver headquarters.

[African observatories will gather biodiversity data](#)



Scientists are pooling remote-sensing satellite data and geographical information services for two pan-African digital observatories that will provide accurate and readily accessible information on biodiversity and forest cover for policymakers.

Under a grant awarded in 2009, the European Commission's (EC) Joint Research Centre (JRC) is supporting the development of the observatories, details of which were discussed at the fourth EuroScience Open Forum (ESOF 2010) on 5 July, 2010.

One is the Observatory for the Forests of Central Africa (OFAC), which aims to serve as a single reference centre for scientific and technical information to help develop policies and programmes on the sustainable management of biodiversity, forest cover and food security in Central Africa's forests, which support around 40 million people. It will help bridge the knowledge gap by providing easily accessible information for policymakers, Paolo Roggeri, staff member from the JRC told the forum. European satellites will provide data on vegetation cover and drought to help track deforestation, desertification and land degradation - including illegal logging in the region. The portal will be divided into themes such as soil, forests, drylands, agriculture, biodiversity, and disasters, and each theme will contain reference maps, specific analysis of development issues and related scientific topics. The observatory will also train local foresters in collecting baseline data.

The other initiative supported by the grant is the Digital Observatory for Protected Areas (DOPA), an online information system aimed at helping policymakers assess the state of protected areas and prioritise interventions in natural parks supported by the European Union. The digital observatory is designed as a set of web services that help assess, monitor and forecast the vulnerability of large ecological systems, and will cover the entirety of Sub-Saharan Africa.

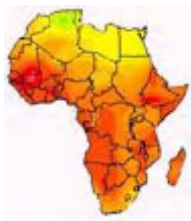
"The assumption that information is accurate and available is a fallacy," Alan Belward, head of the Global Environment Monitoring unit, at the JRC's Institute of Environment and Sustainability, told the ESOF session. "It is the duty of scientists to fill the gap." Samy Mankoto, president of the Network of Protected Areas of Central Africa (RAPAC), added that it is important to have good scientific indicators for decision makers. And Carlo Paolini, a biodiversity and conservation consultant based in Italy, highlighted the need to have context-specific analyses of loss of forests or biodiversity in different parks, the absence of which makes it difficult for technical staff to identify and prioritise appropriate intervention strategies..

[Memorandum of Understanding between the ICPAC and RCMRD](#)



At the occasion of a technical support mission of the AMESD Head Office (Addis Ababa) to the IGAD Climate Prediction and Applications Centre (ICPAC) in Nairobi from 6 - 10 April 2009, a Memorandum of Understanding between the IGAD Climate Prediction and Applications Centre (ICPAC) and the Regional Centre for Mapping of Resources for Development (RCMRD), was prepared and signed between the two Institutions on 9 April 2009.

This agreement establishes a close collaboration and sharing of funds in the framework of the AMESD thematic action development and more particularly for the development of the AMESD products based on satellite data received from the EUMETCast through the PUMA stations and the new AMESD thematic receiving stations to be provided to 46 ACP African countries. ICPAC remains the leader in the AMESD implementation for the IGAD countries and will develop and distribute the product on "Natural Habitat Conservation Assessment" while RCMRD will be responsible for the development of the "Land Degradation Assessment" product.



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[SADC THEMA Course on GIS, Remote Sensing and GEONETCast](#)



A total of 19 participants from seven different SADC countries successfully concluded the ITC's distance education course on "GIS, Remote Sensing and GEONETCast" on 25 June 2010. The course was undertaken in the framework of the Southern African Development Community Thematic Action (SADC THEMA) of the African Monitoring of Environment for Sustainable Development (AMESD). AMESD in Southern Africa aims to empower SADC and its member states to manage agricultural and environmental resources in a sustainable way.

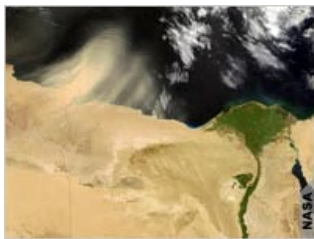
"This training shall improve the capacity of participating countries to work with the GEONETCast data and enables the participants to become familiar with GIS and Remote Sensing" said Isaac Kusane, the Project Leader of the SADC THEMA within the Botswana Department of Meteorological Services (BDMS). He further explained, "Good knowledge of GIS and RS are the basis to work with the AMESD services in the future". The participants of the course were staff members of the collaborating Ministries (Ministry of Agriculture and Ministry of Environment) of the participating member countries. Participants from Botswana, Zambia, Zimbabwe, South-Africa, Namibia, Malawi and Swaziland attended the distance education course. A second session has been planned to start in November 2010. The main topics were: principles of Remote Sensing (3 weeks), principles of GIS (2 weeks) and GEONETCast (1 week). The course combined self-study with online support by ITC staff. The general approach was task-based learning that blends theory and practice. Most communication occurred via ITC's digital learning environment Blackboard. The participants submitted the result of their exercises to ITC at a regular basis for assessment purposes. The DE course was ended with an online-real time exam. The course took 6 weeks, 20 to 24 hours a week. See also [Servir Community Blog](#).

[First batch of deployments of AMESD satellite receiving stations in the IGAD region successful](#)



AMESD station for Kenya National Technical Focal point (DRSRS) - A full AMESD station has been installed at the Department of Resource Survey and Remote Sensing (DRSRS) of the Ministry of Environment and Mineral Resources, Nairobi. The DRSRS is the Associate No 1 and national focal point for Kenya. A full AMESD station has also been installed at the Somalia Water and Land Information Management (SWALIM), in Nairobi, operating for Somalia. The SWALIM is the Associate No. 6 and national focal point for Somalia.

[U.S.-Egypt project uses space technology for environmental change](#)



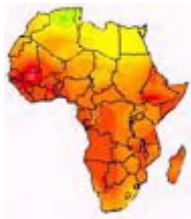
Scientists and representatives from U.S. and Egyptian technical agencies met with industry and university partners in Cairo June 14–17 to examine the role that remote sensing and other space technologies can play in helping Egypt address multiple environmental issues, including climate change.

The workshop, hosted by the Egyptian space agency, the National Authority for Remote Sensing and Space Sciences (NARSS), is one of many science and technology partnerships resulting from President Obama's commitment in Cairo in June 2009 to renew engagement with Muslim-majority countries.

The meeting's 100 participants included scientists from the Egyptian government, NASA, the National Oceanic and Atmospheric Administration ([NOAA](#)), U.S. Agency for International Development (USAID) and the Department of Energy, [Regional Center for Mapping of Resources for Development](#) in Nairobi, Kenya, U.N. Habitat, the U.N. agency that promotes sustainable urbanization and access to clean water.

From the workshop in Cairo came a list of about 30 priorities for cooperation between scientists in the United States and Egypt for applications in agriculture, water, urbanization, archaeology, space weather and small satellites. Proposals for possible future U.S.-Egypt collaboration include:

- NARSS and NOAA's National Weather Service, engage in projects involving satellite-based environmental monitoring to protect coastlines and predict weather.
- NARSS and NASA's Goddard Space Flight Center, use data from Egypt's first remote sensing satellite, EgyptSat-1, to study water balance, manage disasters and improve atmospheric models.
- NARSS, NASA, NOAA and Chapman and Cairo universities, assess the impact of climate change by using satellite data to monitor Nile River water resources, agriculture, land use changes, desertification and soil erosion.



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- Purdue University and Egyptian universities, improve regional public health surveillance by using remote sensing to detect and fight infectious diseases and create early warning systems for mosquito-borne diseases.

The projects will be forwarded for consideration to the board of the U.S.-Egypt Joint Science and Technology Fund, which provided initial funding for this workshop. Read [more](#)

[Egypt scours bed of Lake Qarun in search of antiquities](#)



Egyptian experts have begun to explore the depths of Lake Qarun south of Cairo using remote sensing radars in search of sunken artefacts, antiquities officials told AFP. Antiquities supremo Zahi Hawass said "It is the first time ever that the antiquities department carries out an archaeological mission in Lake Qarun."

Khaled Saeed, who heads the department of pre-historic affairs at the Supreme Council of Antiquities, said the team under his supervision hopes to pinpoint "huge basalt rocks" at the bottom of Lake Qarun. According to Saeed, the discovery of the rocks was first made by Egyptian-American scientist Faruq al-Baz, a veteran of NASA's Apollo programme, five years ago. Baz, who now runs the Centre for Space

Studies at Boston University, was carrying out a satellite survey of Egypt's Western Desert when he and his team discovered in the Lake Qarun area "a large number of huge blocks of rock." "I believe that these huge slabs are made of basalt (volcanic rock) which was eventually moved upstream to the Giza plateau for the construction of the Great Pyramid," Saeed said.

Teams of divers are examining a 10-kilometre (6.2 mile) long stretch of sea bed in Lake Qarun, Saeed added. The lake is the third largest in Egypt and part of the Fayyum Oasis, more than 100 kilometres (62 miles) south of Cairo, and part of the ancient Lake Moeris, once a body of sweet water. Fayyum is known for a series of colourful funerary portraits - masks painted on wood tablets and dating from the Roman period (1st - 3rd centuries AD) which were used to cover the face of the deceased.

[Nigeria set to launch N3.1b digital mapping project](#)

As the Lagos State land reform vision reaches the climax, consultants working on the N3.1 billion Lagos Enterprise Digital Mapping and Geographic Information System (GIS) project, have said the project would soon be launched. According to the experts, at the moment revaluation of different aspects of the project is undergoing testing, which upon completion will eventually boost the State's capacity on land management.

The project, which is expected to solve all the land mismanagement cases in the state, was conceived to ensure effective use and application of geospatial information in the state's development plot and the mega city initiative. The purpose of the project is to produce orthophotos, digital maps and GIS database for the whole state for the implementation of various development programmes in rural areas as well as in the capital and other major towns. This will serve as a veritable tool for orderly development control mechanism for the state.

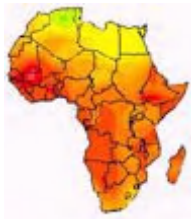
The project has six broad technical modules;

- Acquisition of digital aerial imageries and establishment of geodetic control;
- Establishment of Geoidal parameters, active Global Positioning System and reference station with Continuous Operating Reference Station;
- Digital mapping, Digital Terrain Model and orthophoto maps;
- Enterprise GIS, bathymetry chart;
- Bathymetry Survey of Lagos lagoons and creeks
- Provision of information and communication technology infrastructure, education and training.

The project was awarded to four contractors: Interspatial (modules one, three and four); Lordsfield Limited (module two); UNILAG Consortium (hydrographical surveys) and AAC Consulting (training and equipment supply). The Lordsfield Limited team includes UNILAG Geodesy Group (UGG), a collection of researchers and retired professors; and Network Geomatics which brought in Geoqinetic.

[Sierra Leone improves internet connectivity](#)

A new Internet exchange point (IXP) has been launched in Freetown, for the first time allowing Sierra Leone's web users to exchange local data within the country rather than over international links. The new facility, know as the Sierra Leone Internet Exchange, or SLIX, will allow Internet service providers to interconnect and exchange local data traffic within the West African country rather than over international



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links. This will promote more efficient, resilient, and less costly connectivity by improving local Internet performance and reducing international bandwidth costs.

"The launch of SLIX is an important milestone for the Internet in our country," commented Michala Mackay, President of the Sierra Leone Chapter of the Internet Society, an international non-profit organisation. "In addition to the technical benefits SLIX will bring to service providers and users, it also marks a key success in the sustained efforts by Internet stakeholders to work collaboratively in achieving our goals to extend the development and availability of the Internet for all Sierra Leoneans," Ms Mackay added.

"Sierra Leone is the 19th African country to establish an Internet exchange point," said Michuki Mwangi of the Internet Society. "Well developed and maintained IXPs are an essential component in building a robust Internet access ecosystem, and the Internet Society is committed to assisting their growth in Africa," he added. The development of SLIX was facilitated by the Internet Society's African Interconnection and IXP Programme, which aims to promote more robust Internet connections within and between countries in Africa. The organisation is currently working with six African countries at various stages of IXP development and last month announced the creation of the African Peering and Interconnection Forum, to address key interconnection opportunities and challenges in the region.

Buses equipped with GPS system in Kairouan, Tunisia



Similarly to other major towns in Tunisia, the Kairouan Regional Transportation Company has started outfitting its bus fleet with the latest cutting edge global satellite positioning (GSP) system. This system will allow more efficient exploitation of its 120 buses.

The company also digitized electronic passenger information and it is currently working to develop its electronic site to allow its customers to benefit remotely from its services. The implementation of this system is in line with the country's national upgrading program and aims at improving public transport.

Regional Centre of Studies of Soils and climate change (RSSC), may monitor areas of environmental risks in Angola

The monitoring and environmental assessment, identification of areas of risk, as well as integrated management and use of soils in sensible zones are some of the tasks to be executed by the future regional centre of studies of soils and climate changes (RSSC), ANGOP has learnt.

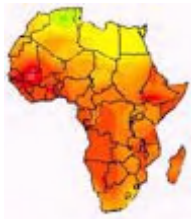
The centre will be created within the Southern Africa Development Community Countries (SADC) and according to technicians that participated in a meeting in Luanda, it will work to fight poverty and famine, migration of species, integrated management of hydric resources and training of cadres.

They have pledged to make a survey and mapping out of the resources, zones of risk, identification of illnesses sensible to climatic alteration, to implement a plan of environmental management, as well as a programme of modelling of environmental parameters. In universities and higher institutes of the region it will be done projects of investigation with identified themes, meant to promote scientific research and give a response to natural calamities, through the creation of laboratories of reference. Technicians linked to higher teaching, agriculture and science proposed that the future centre study the reasons for the decrease of the pelagic species, the fixation of desert's kinds, as well as to create laboratories for measuring the streams of the rivers and sub-centres with hydrologic, meteorological stations with system of early warning in each country of the region. Participants debated matters such as Climate Changes and Use of Soils the Angola's Cases, Climate Changes and Use of Soils Taking into Account the Different Regions of the World, among other linked to the usage of soils.

Environment ministry in Angola launches projects on data-base creation

The Ministry of Environment in Angola has launched the project for the creation of a date-base on environment indicators, meant to facilitate the elaboration of the second report of state on the sector in Angola, it was informed. According to the scheme on the project, the initiative aims at enabling the creation of a centralised repository of data bases on environmental indicators.

The project will also make it possible for the collecting of data for support to indicator calculation, to implement a flexible tool for elaboration of reports and other documents, as well as technical and functional training of the users. For a better co-ordination, the Ministry has created the national data-base unit for environmental indicators that will be responsible for collecting treatment and analyses of environmental data, as well as periodical production of reports on the environment.



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Madagascar Service Production for UN-IFAD and ESA



GAF AG has been awarded with Service Production by UN-IFAD and ESA. for an area of about 14,000 km² in Western Madagascar, GAF will provide dedicated earth observation products which have been customised to meet the specific user requirements of UN-IFAD best possible. Project activities started in June 2010 and will be concluded in November 2010.

International financial institutions (IFI) provide financial support and professional advice for development activities on local to regional scale in developing countries. Their activities are generally organised in dedicated projects financed by long-term loans or grants covering social and economical development aspects in a wide range of fields. For certain fields

earth observation products and services have been identified as a useful tool to support the monitoring and management of IFI projects, to improve the efficiency of the investments made and finally to assess the impact and social benefits of the financed development activity.

ESA, as part of its Value Adding Element (VAE) programme, has been interacting with the IFI and their stakeholders to understand their working environment and information requirements in particular for earth observation services. This process has resulted in service specifications for one specific user UN-IFAD (UN International Fund for Agricultural Development), which have been put out for tender. The main purpose of the procurement is to demonstrate and validate the utility of currently available EO information services in support of selected IFI projects.

GAF has been awarded with Service Trial 2, which is directly driven by the requirements of the supported IFAD project and its local stakeholders (the AD2M project, www.ad2m.mg). For an area of about 14,000 km² in Western Madagascar (Menabe region), GAF will provide dedicated earth observation products which have been customised to meet the specific user requirements of UN-IFAD best possible. Including products such as Land Cover Maps or Digital Elevation Models, the specified EO-service will deliver products which will be validated together with the service performance by UN-IFAD and local stakeholders. The benefit of the information service will be assessed relatively to the objectives of the project as well.

Rwanda Environment Management Authority (REMA) launches Climate Change Project

The Rwanda Environment Management Authority (REMA) has launched a four year project aimed at protecting the population from the negative effects of climate change. Speaking during the launch, the environmental consultant, Mito Toshikazu, said the project will curtail future climate change consequences such as floods and landslides. "The project will reduce the causes of climate change by reducing the emission of greenhouse gases," Mito said.

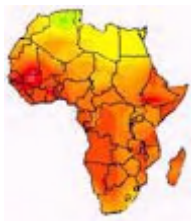
"It will sensitize the population on the effects of climate change and empower them to effectively deal with its impact." Other long-term measures will include creating institutional framework to enable institutions collectively deal with the anticipated problems and share knowledge. The project will be jointly funded by the Government of Japan and Global Environment Facility, with the United Nations Development Programme (UNDP) and United Nations Environment Programme (UNEP) providing the technical expertise.

Pilot National Land Information System for Uganda

International Land Systems (ILS) has entered into a three-year World Bank-funded contract to encourage private sector growth by improving the country's land administration systems. The Private Sector Competitiveness Project (PSCP II) aims to assist the Government of Uganda in eradicating the primary constraints preventing the international competitiveness of Uganda's private sector. Fundamental to achieving this goal will be modernising the land registry.

As part of PSCP II, the Design, Supply, Installation, Implementation of the Lands Information System and Securing of Land Records (DeSILISoR) supplementary project will establish a modern national land information system and land records archiving system to underpin future enterprise creation and growth, and increase public access and tenure security. Through the pilot project, a transparent and efficient land management system will help to mitigate the current difficult processes associated with obtaining and transferring evidence of land ownership as well as generating a more attractive environment for investment.

Property registration procedures in Uganda are relatively inefficient, expensive, and non-transparent. Consequently, the public and investor confidence in security of tenure in Uganda are dramatically reduced. By digitizing land records, streamlining and automating the registration process the public and businesses



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will be able to more easily determine land rights as well as possibly gain documented rights to land and property. ILS Project Manager, Nigel Edmead says, "Throughout its history, Uganda has had mixed success with various land reforms that have among other things, left the national registry inefficient and non transparent. The Government of Uganda now realizes how important an organized, transparent land registry is to the economic growth of a nation. Both public and private sectors will benefit from our project activities." The system will be carried out through a pilot phase that will test the approach in 6 districts. It will then be implemented on a national scale at the end of the three-year project. The Ministry of Land, Housing and Urban Development of Uganda is the government agency providing support to project implementation. ILS is subcontracted to IGN France International (IGN FI) to lead the configuration of a district based Parcel Information Management System and national land information system based on ILS' LRS, MultiCadastre and Cashier products.

[Agricultural Information Communication Centre inaugurated in Rwanda](#)

Access to agricultural information in Rwanda is becoming a reality with inauguration of an Agricultural Information Communication Centre (AICC). Funded by the governments of Rwanda and Belgium, AICC aims at collecting, storing and disseminating information on the agricultural sector in the country.

The information will be collected from the field and ascended to the centre for processing and dissemination. Such information may include market prices, pest management, and appropriate cropping practices. Equipped with Information Communication tools like a website, Geographic Information Systems (GIS), Management Information Systems (MIS), a digital library, and a modern audio-visual studio, the centre has been built in Kigali, the capital of Rwanda.

Scientists, researchers, farmers and extension officers as well as business community can use it to search for information, which is also available on the website. Farmers who are scattered all over the country will be using community tele-centers (centres with Information Communication Technology equipment like computers and internet) in rural areas to access the information. According to the governor of the National Bank of Rwanda (BNR), Mr. François Kanimba, the centre will help control inflation. It will facilitate farmers to locate markets for their produce and interact among themselves, while exchanging information to increased production.

[Department of physical planning and housing receives GIS training](#)



The Government of the Republic of Zambia has placed priority on the preparation of the Integrated Development Plans (IDPs) so as to effectively foster economic growth and development in the Districts. The IDP further aims at coordinating the work of the local and other spheres of government in a coherent plan to improve the quality of life for all the people in the area. The major challenge in the formulation of IDPs in Zambia however, has been the lack of spatial data, and where the data is available it is seldom updated.

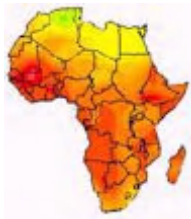
To avert the status quo the Ministry of Local Government and Housing (MLGH) through the Department of Physical Planning and Housing (DPPH) in Lusaka

send planners in two groups of four to the Provincial Centre for Geographic Information Service (PCGIS) in Livingstone for basic Geographic Information Systems (GIS) training. The two groups were at PCGIS from the 26-30 April and 24-28 May, 2010 respectively. The DPPH sent its staff at PCGIS after realizing that the knowledge and use GIS is cardinal and inevitable in the formulation of IDPs especially in the establishment of an up to date spatial database in a digital format depicting the geographic status of infrastructure and other features. It is also significant in facilitating spatial analysis of an area of interest in order to support an integrated and effective planning process.

What made the training even more exciting was that Mr. Zulu the Provincial Planner for Lusaka was among the people who were being trained. The DPPH staff found topics like spatial reference, integration of tabular data to GIS, geo-referencing, map making so thrilling. The entire participants were elated with the training such that they wanted to be at the centre a little longer.

[Geological storage Atlas to disclose potential carbon sites in South Africa](#)

Carbon capture and storage in SA will take a step further next month with the launch of an atlas showing potential storage sites for compressed carbon. Heavy polluters have come under pressure internationally to reduce carbon emissions and SA has a particularly high carbon footprint - due to its reliance on coal-fired



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electricity. However, while carbon capture and storage demonstration projects have been built in a few countries, the technology is not yet at a commercial stage.

Tony Surridge, head of SA's Carbon Capture and Storage Centre, told Business Day that a geological storage atlas would be launched on 24 August 2010. "The first make or break hurdle was - do we have enough storage," he said. "I believe we do, and the atlas will show where." The technology depends on the suitability of geological sites to safely store compressed carbon.

The South African National Energy Research Institute, which is the parent body of the centre, estimated in its annual report that 40-million tons of carbon dioxide a year could be stored geologically in SA over the next 100 years. This would require a total storage capacity of four gigatons. The centre was launched in March last year, and secured R25m in funding for its first five years. Donors include the Norwegian government, and local corporate such as Sasol, Eskom, Anglo Coal and PetroSA.

French power giant Alstom says it hopes to offer the technology to its customers from 2015. SA plans to have an operational demonstration plant by 2020. Most power stations now include desulphurisation technology - but it has proved harder to capture carbon dioxide emissions as the molecules of the gas are smaller. Carbon dioxide emissions must be captured at source. Once captured, it is compressed and sent via a pipeline to the storage site, where it is injected deep into the ground.

[Space science and technology station opened in Namibia](#)



Prime Minister of Namibia, Nahas Angula inaugurated a new Chinese-funded space science and technology station at Swakopmund, Namibia last month. As per the main agreement between Namibia and China on the operation of the China TT&C station, it was agreed that Namibia has to train people that will be able to manage the station beyond 2015. Last year 11 Namibians went through theoretical training in space science in China and would undergo further practical training in September this year.

At the inauguration, Angula congratulated the trainees and urged them to study hard, saying they must remember that the focus on space science and technology is a relatively alien field to Namibia. In addition, he said the facility should be used to expose learners to the area of space science and technology. "Through such facilities, we can stimulate interest in learners to become engineers, technician and researchers in the rare areas of science engineering and technology. I wish to see the first African person to go into space coming from Namibia," he said.

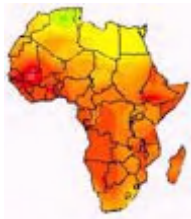
Space technologies that use satellite links are communication, education, land-use planning, environmental monitoring and management, traffic control and disaster prevention. Angula stated that these facilities can also be used to manipulate large data streams, analyze data obtained from distant sources, and programming and commanding objects at a distance which is useful in numerous industrial applications.

[1st African Youth Summit on Climate Change 2010](#), 20 – 22 August 2010, Kasarani Sport view Hotel, Nairobi, Kenya

The 1st African Youth Summit on Climate Change 2010 is organized by African Youth Initiative on Climate Change (AYICC) to serve as an appropriate avenue where African youth can come together and discuss issues relating to various topics on climate change including the role of youth in adaptation and mitigation projects, public awareness and participation, biodiversity and active participation in UNFCCC negotiations. The Summit is open to young people from all over Africa interested and involved in initiatives aimed to tackle climate change and ensure sustainability. It will consist of informative sessions and skills-building workshops on climate change issues ranging from scientific knowledge to effective political advocacy.

[Kenya's International Conference on Biodiversity and Climate Change](#), 15-17 September 2010, Nairobi, Kenya

Towards a Comprehensive Conservation Framework Kenya has a wealth of biodiversity vital to human wellbeing and planetary health. Despite the value of our biodiversity, we have yet to inventory all species or develop a national biodiversity framework that takes into account projected changes in land use and climate. The Kenya Wildlife Service ([KWS](#)), African Conservation Centre ([ACC](#)), National Museums of Kenya ([NMK](#)), Department of Resource Surveys and Remote Sensing (DRSRS), Regional Centre for Mapping of Resources for Development ([RCMRD](#)) and Kenya Forest Service ([KFS](#)) will host Kenya's International



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Conference on Biodiversity and Climate Change, 15 - 17 September 2010, as the country's contribution to the International Year of Biodiversity.

The conference will bring together conservation scientists, planners, managers and policy makers to coordinate species inventories and map Kenya's biodiversity. The working sessions will consider how to collate, integrate, analyze and share information using the best available mapping, data storage and analytical tools. Participants will discuss a national framework for conserving Kenya's biodiversity.

The conference will include the following thematic sessions:

- Biodiversity assessment
- Biodiversity informatics
- Climate change
- Land-use and livelihoods
- Policy implications
- Poster sessions

The national conference will draw on international experience in biodiversity conservation and participants from neighbouring East African states. Broad public participation is invited. Express your interest to: biodiversityconf@kws.go.ke.

[Call for papers: Remote sensing of soil](#)



Special issue on remote sensing of soil will be published by the journal Applied and Environmental Soil Science. In the recent years, many scientific studies have been developed to demonstrate the potential of remote sensing in surface geophysical parameters estimation, based on different new satellite sensors (Aster, Ikonos, Quickbird, Formosat, Spot5, Chris/Proba, Asar/Envisat, Palsar/Alos, Radarsat-2, Terrasar and MSG). Knowledge of soil surface conditions (soil moisture content, roughness, temperature, and texture) is of highest importance in agriculture, atmospheric sciences, and hydrological studies.

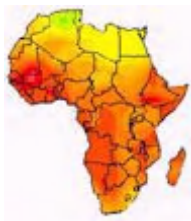
The main focus of this special issue will be on the new quantitative methodologies to estimate soil characteristics using high spatial or temporal resolution multi-spectral remote sensing data (optical, microwaves). The special issue will become an international forum for researchers to summarize the most recent developments and ideas in the field, with a special emphasis given to developed results obtained within the last five years. The topics to be covered include, but not limited to: Satellite data analysis over soil surface; Physical modelling (radiative transfer) over soil; Inversion models; and soil moisture, roughness, texture, temperature, carbon/organic matter mapping. Authors should carefully read over the journal's [Author Guidelines](#) before submission. Manuscripts are due by 15 November 2010. Prospective authors should submit electronic copy of their complete manuscript through the journal [Manuscript Tracking System](#).

[Call for papers: Map Africa 2010 – 5th Annual African Conference on Geospatial Technologies and Applications](#), 23-25 November in Cape Town, South Africa

The African geospatial community is invited to participate in and showcase their work at Map Africa 2010, the 5th Annual African Conference on Geospatial Technologies and Applications, organized in partnership with the [Department of Rural Development](#), South Africa; the Regional Centre for Mapping of Resources for Development ([RCMRD](#)), Kenya; and UN Economic Commission for Africa ([UNECA](#)), Ethiopia. The theme of the conference is "Geospatial Readiness for Building Africa" which aims to highlight the significant role of geospatial technologies in the areas which are considered as the building blocks of a nation and contribute to its growth and development. The abstract (not exceed 250 words) should summarize and indicate the key research/points to be further presented and discussed in the Sessions of Map Africa. For queries related to paper submission, contact Akanksha Tyagi at papers.mapafrica@gisdevelopment.net or akanksha.tyagi@gisdevelopment.net.

[Call for registration: 2010 World Water Week](#), 5 - 11 September in Stockholm, Sweden

The [World Water Week in Stockholm](#) is the annual meeting place for the planet's most urgent water-related issues. Organized by the [Stockholm International Water Institute \(SIWI\)](#), it brings together 2500 experts, practitioners, decision makers and leaders from around the globe to exchange ideas, foster new thinking and develop solutions. The theme for 2010 is "Responding to global challenges: The water quality challenge -



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prevention, wise use and abatement". This year's program and [Registration online](#) can be explored through the interactive event finder on the World Water Week web.

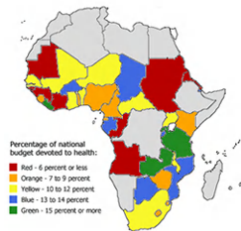
[Call for Papers and Workshop Proposals: 18th ACM SIGSPATIAL International Conference on advances in Geographic Information Systems \(ACM SIGSPATIAL GIS 2010\)](#), November 2-5, 2010, San Jose, CA, USA

The ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems 2010 (ACM SIGSPATIAL GIS 2010) conference provides a forum for original research contributions covering all conceptual, design, and implementation aspects of GIS ranging from applications, user interfaces, and visualization to storage management and indexing issues. This conference is the premier annual event of the ACM Special Interest Group on Spatial Information (ACM SIGSPATIAL). Researchers, students, and practitioners are invited to submit their contributions to ACM SIGSPATIAL GIS 2010.

Suggested topics include but are not limited to: Cartography and Geodesy, Computational Geometry, Computer Vision Applications in GIS, Distributed and Parallel algorithms for GIS, Earth Observation, Geographic Information Retrieval, etc. Submission length is limited to 10 pages. Uploaded submissions at: <https://cmt.research.microsoft.com/GIS2010/Default.aspx>. Abstract deadline is June 24, 2010 but has been extended without a definite date.

Practical SDI implementation materials from within and outside of Africa

[Mapping health budgets and child deaths](#)



As many African countries battle to bring down the staggering rates of maternal and [child](#) mortality, the maternal and child health made a fitting theme at the African Union (AU) Summit last month in Kampala, Uganda. At the summit, African leaders came under fire for failing to live up to the 2001 [Abuja Declaration](#), in which they agreed to commit at least 15 percent of their national budgets to health. To date, only about five countries have done so. Using data from a recent [report](#) by Countdown to 2015, a group monitoring maternal and child health, [IRIN/PlusNews](#) has mapped the percentage of national budgets allocated to health against mortality rates of children younger than five years.

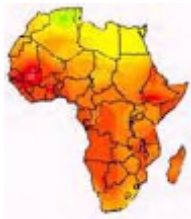
[La Niña: Could be a busy season for disasters](#)



The La Niña phenomenon has officially arrived and disaster response teams around the world might need to brace themselves for heavier monsoons, bigger and more frequent hurricanes, and angrier cyclones. "There is global consensus that we are at the beginning of a [La Niña](#), but we cannot pronounce the intensity of the event yet - we have to wait for it to evolve," said Rupa Kumar Kolli, Chief of the World Climate Applications and Services Division at the World Meteorological Organization (WMO). La Niña is characterised by unusually cold ocean temperatures in the eastern equatorial Pacific Ocean; [El Niño](#) is characterised by high temperatures, the US government's National Aeronautics and Space Administration says on its website. The colder-than-normal ocean temperatures prevent rain-producing clouds from forming over the eastern equatorial Pacific region, including the open ocean south of Mexico and Central America, but enhance rainfall over the western equatorial Pacific region of Indonesia, Malaysia and northern Australia. This in turn affects the jet streams, or strong wind-flows, in the upper levels of the atmosphere and the behaviour of storms outside of the tropics in both the northern and southern hemispheres. In short, La Niña is a global phenomenon.

The National Hurricane Centre at the US government's National Oceanic and Atmospheric Administration (NOAA) has been expecting a La Niña to occur, and by May 2010 predicted a 70 percent chance that there would be 14 to 23 named storms, with wind speeds of more than 62km per hour. This is far more than the average of 11 named storms during the hurricane season in the Atlantic region, which began in June. The first hurricane of the season, Alex, hit Mexico on 30 June. NOAA said it was the first hurricane to be recorded in June in the Atlantic Basin since 1995, and the strongest in that month since 1966.

Cobus Olivier, a scientist in the Prediction Research section of the South African Weather Service, said the possible impact of La Niña on Africa, and particularly southern Africa, was unclear. "At the moment the La Niña event is only starting out and will most probably take a month or two before it's considered a true La Niña event." He said it was very difficult to predict the impact as this could vary within the African region and

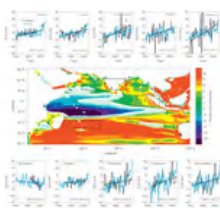


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from one La Niña event to another. La Niña is usually associated with more rain, but an analysis of rainfall patterns for African countries south of the equator tells a different story. Olivier and his colleagues used rainfall data collected during La Niña events from 1961 to 2002, for the months of August, September and October, when the event is expected to be more pronounced. "Uganda and the southern parts of Sudan usually seem to have wetter conditions during La Niña .but parts of Angola, DRC [Democratic Republic of Congo], Mozambique, Tanzania, Kenya, Somalia and Madagascar tend towards drier conditions," he said. In South Africa the situation is "very variable", but "Generally it looks like there may be favourable spring rains [in September-October], and this is also supported by the latest forecast."

Indian Ocean sea levels 'rising at different rates'



Mapping variations in regional sea level changes of different parts of the Indian Ocean could help developing countries better adapt to the effects of climate change, according to a study published in *Nature Geoscience* (11 July, 2010).

Researchers from the University of Colorado, United States, identified distinct patterns of sea-level rises using observational and satellite data combined with climatic and ocean circulation models, including results from the Intergovernmental Panel on Climate Change (IPCC) Fourth Assessment Report.

They found that if human effects on the climate continued at the current rate, mid-ocean islands such as the Mascarenhas archipelago, the Indonesian and Sumatran coasts, and parts of India and Bangladesh, could see much higher sea level rises compared to mean sea level increases predicted for the planet as a whole. Conversely, Zanzibar could experience falls, whilst the Seychelles and the east coasts of Kenya and Tanzania may see little or no rise. The Maldives may only experience substantial sea-rises during the winter monsoon. The variations are due to oceanic and atmospheric circulation systems, which have been studied together for the first time, lead author Weiqing Han, associate professor at Colorado's Department of Atmospheric and Oceanic Sciences told *SciDev.Net*. "This regional sea-level change information will be more important for effective risk assessments in future," said Han.

Global atmospheric circulation systems responsible for south- and north-easterly trade winds, as well as west-to-east surface winds along the equator, are strengthening as the tropical waters of the Indian Ocean heat up. Those winds are combining to drive water movements that lead to sea rises in some areas and falls elsewhere. To compound the problem, the winds blow surface water away, leaving colder sub-surface water behind, which is denser and lowers the sea level further.

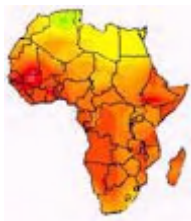
Goulburn Valley Water improves efficiency with customized GPS software



Goulburn Valley Water provides urban water and wastewater services to 121,000 people in 54 towns and cities in an area stretching from the outskirts of Melbourne to the Murray River in Australia. With 58,000 water meters spread over 20,000 square kilometers (12,000 square miles), checking water readings and maintaining meters is a time-consuming and costly exercise. Goulburn Valley Water intends to reduce that cost by accurately capturing the locations of all 58,000 meters, and replacing hard to access meters with meters capable of transmitting readings on water usage. Eventually they hope to have whole towns fitted out with this technology, which will enable the organization to obtain hourly flow data from the meters to gain an accurate snapshot of the water network. They will be able to use this information to track down leaks and other problems in the system, leading to better water conservation and management, as well as savings for customers.

The first step in the project is to find all of the existing meters and record an accurate location so that they can find them again. To do this, Goulburn Valley Water equipped their meter reader field crew with Trimble® GeoExplorer® 2008 series GeoXH™ handhelds and Zephyr™ antennas mounted on rangepoles. They chose GeoXH handhelds because they wanted the most accurate and reliable solution possible. Initially they chose a more complicated GIS data collection solution to run on the handhelds but as the meter readers are not GIS experts they were unable to collect the data they needed quickly and accurately. "It was too complicated. It's not what they [meter readers] do. We quickly realized it wasn't something we could just hand over."

The Aquire software was a tremendous success for Goulburn Valley Water. With it, the organization is now considering changing the meter reading process so that the meter reader picks up the location of the meter as well as the actual reading. Instead of a complicated user interface, meter readers simply see a big green button on the screen that says "Start". The training time for the new software is just one hour, and meter



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readers feel much more confident and are happy to use it. The faster data collection process is expected to result in real savings for the utility: "Every time you save five seconds, you can multiply that by 58,000" explains Squires. Previously, Goulburn Valley Water used pen and paper to record meter readings and then each meter reader spent up to one and a half hours traveling back to the office to deliver the paper forms. Originally, the organization envisaged hiring two additional staff: one person to coordinate loading the handhelds with data and then postprocessing the data, and another as an additional meter reader. The custom solution meant those two additional staff was not required, potentially saving Goulburn Valley Water ongoing salary and training costs. Instead of having a coordinator in the office, Thinking Windows was able to customize the AquaRate software to send information related to groups of meters to the handheld, which mimic the walk route sequence the meter reader uses. Hence data is collected using the most efficient route, saving time in the field. Using a web service, up to 1000 meters per route sequence are exported to the handheld via a web service from the AquaRate billing system, which uses a Microsoft SQL Server database. At the end of each day, each meter reader sends the data to the office using the GeoXH handheld's integrated Wi-Fi radio to connect straight to the internet from their home—saving them up to one and a half hours' travel time each day. The data from their route is uploaded via the web service back to AquaRate, complete with uncorrected position information. AquaRate then uses the GPS Pathfinder Office software to postprocess the position data.

[Finding space for crowd-sourcing in humanitarian response](#)



Crowd-sourcing" is a new buzzword in the world of humanitarian information. The combined power of mobile phones, mapping technology and social networking can enable citizens in crisis to seek help, facilitate aid deliveries, bear witness to abuses and hold governments and aid agencies more accountable, advocates say.

[Crowd-sourcing](#) on platforms including [Ushahidi](#), for example, took place on an unprecedented scale after the January 2010 earthquake in Haiti. According to those involved, the impact it had is undeniable: communities were able to report their needs while accurate street maps were created for humanitarians and search and rescue teams tried to save lives.

"Crowd-sourcing had been used in previous emergencies, such as the [Wikis](#) created to map Hurricane Katrina and bird flu, but none seemed to have a life beyond the particular incident," said Microsoft's Nigel Snoad, an adviser to the [ICT4Peace Foundation](#). "But in Haiti, Ushahidi and its partners seemed to have a real impact on the way the humanitarian response worked."

"There is real excitement in the humanitarian community about crowd-sourcing and what it can do for emergency humanitarian response," he added. But, he says, there needs to be a meeting of minds, with the technology experts ready to develop tools that can contribute meaningfully to humanitarian response and traditional organizations such as the UN being prepared to embrace non-standard methods of handling emergencies.

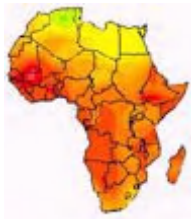
A crisis mapping [conference](#) in October at Harvard University will address lessons learned from Haiti and other disasters, developing a code of conduct for the technology community and the future of crisis mapping and humanitarian technology. According to Valuch, for crowd-sourcing to be successful, there is a need for "lessons learned" processes; consultation with humanitarian actors; establishing links, protocols and partnerships before disasters happen; raising awareness about the potential as well as limitations of crowd-sourcing - such as verification of data - and training teams of humanitarian workers in using new crisis mapping tools and collecting their feedback.

GIS Tools, Software, Data

[Converting WISE 1.1 soil profile database for crop simulation models](#)



Computer simulation models have recently become more common and acceptable for impact assessment studies and for supporting policy decisions at different temporal and spatial scales. However, for application of these models detailed data bases are required that cover large regional areas. Unfortunately, this information is rarely available. The International Soil Reference and Information Centre (ISRIC) have been developing a detailed global soil profile database entitled "World Inventory of Soil Emission Potentials (WISE)", and its version 1.1 included 4,382 soil profiles.



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To use these in crop model applications, Universities of Georgia (Gerrit Hoogenboom, gerrit@uga.edu) and Florida (Consuelo C. Romero and Arjan J. Gijsman), in collaboration with HarvestChoice/IFPRI (Jawoo Koo and Stanley Wood), converted the physical and chemical properties of the soil profiles to the DSSAT Crop Systems Model format. After rigorous quality control efforts and the estimation of missing data, the team was able to successfully convert 3,404 soil profiles in DSSAT-compatible format. As a next step, the team is also planning to expand the work on the WISE 3.1 (which contains 10,250 soil profiles).

- Data: <https://harvestchoice.wufoo.com/forms/download-wisol>
- Report: <https://hc.box.net/shared/2dz42b8vha>
- ISRIC WISE 1.1 Documentation: http://www.isric.org/isric/webdocs/Docs/ISRIC_Report_2002_01.pdf

New web-tool shows critical situation for migratory waterbirds



A new website providing information on thousands of wetlands and hundreds of waterbird populations shows the difficult situation for the migratory waterbirds of Africa, the Middle East, Europe and Central Asia. A [new website](#) launched by Wetlands International, BirdLife International and the UNEP World Conservation Monitoring Centre (UNEP-WCMC) has revealed major gaps in the protection of many critical sites used by migratory waterbirds. A staggering one-third of the critical wetlands across Africa the Middle East, Europe and Central Asia lack any protection status. This means that the conservation status of many migratory waterbirds is at risk of further decline. Waterbirds travel vast distances, crossing many

countries and often entire continents during their annual migration cycles along 'flyways' that connect breeding, staging and non-breeding areas. Maintaining a network of healthy wetland sites is key to maintaining healthy waterbird populations and conserve critical wetlands along these flyways.

The new '[Critical Site Network \(CSN\)](#)' Tool provides comprehensive information on 561 populations and 294 waterbird species from 3,020 wetland sites. It has been designed to help people to easily obtain information on the most important sites for migratory waterbirds, both at the national and international level.

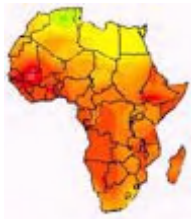
The following information sources are used for the tool.

- [World Bird Database \(WBDB\)](#) is managed by [BirdLife International](#) and stores information on all of the world's bird species and the key sites identified for their conservation (Important Bird Areas - IBAs).
- [International Waterbird Census \(IWC\)](#) Database is maintained by Wetlands International and includes over 25,000 sites of importance to waterbirds. It contains the most complete waterbird count data available in the African-Eurasian region and other flyways.
- [Ramsar Sites Information Service \(RSIS\)](#) provides data on wetlands designated as Wetlands of International Importance under the [Ramsar Convention on Wetlands](#), generally called Ramsar Sites. Wetlands International manages the database for the Ramsar Convention on Wetlands.
- [World Database on Protected Areas \(WDBPA\)](#) provides the most comprehensive dataset on protected areas worldwide and is managed by UNEP-WCMC in partnership with the IUCN World Commission on Protected Areas and the World Database on Protected Areas Consortium.

The CSN Tool has been jointly developed by Wetlands International, BirdLife International and the World Conservation Monitoring Centre (UNEP-WCMC) in the framework of the UNEP-GEF [Wings Over Wetlands \(WOW\) Project](#), funded by the Global Environment Facility (GEF), German Government and several other partners and donors. WOW is the largest international waterbird and wetland conservation initiative ever undertaken in the African-Eurasian region. This web-based tool is accessible at: www.wingsoverwetlands.org/csntool.

Mapquest driving directions and how to use them

MapQuest.com is a comprehensive website that enables users to input a location and find it most places in the world or input several locations within the U. S., Canada and Europe and find directions from one place to another. These are the fundamental services it is known for but is also has related uses that come in very handy. When you are traveling you can simply go to MapQuest, plot out your [trip](#), be it one destination, two or ten and it will connect the dots with MapQuest driving directions. It produces a map of the route, written directions including miles, names of streets, visual representations of directions, time estimate and total miles. Once you have what you need, you can print it (with or without the map), save it, send, link or embed it and you are set to go.



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Some other useful features of MapQuest.com include the ability to find spots of interest like restaurants or state parks near your destinations. If you don't like what it suggests, you can tell it to avoid a step or two and it will recalculate the route for you. You can also instruct it to avoid highways, toll roads or seasonally closed roads. Directions can be calculated by shortest time or shortest distance. And, it also can help you calculate fuel usage, and so does help with the gas.

The newest features of MapQuest driving directions are street level imagery, which provides 360° panoramic views, the ability to save maps on your phone and Blackberry, one-click search for local attractions and new reports from MapQuest's own blog. MapQuest also has links on its main page to the yellow pages, local news and gas prices.

If you have a phone, MapQuest is probably simplest to use for regular travelers since you don't have to access a computer or print anything out. For those who don't like to use your cell phone in the car or when it is illegal to do so, you are left with visiting a computer first and printing out where you need to go. It's simple, especially with the numerous free apps that you can add to a blog if you have one and the new MapQuest driving directions toolbar. But, if you are phoneless, a GPS in the car can save time. But, then again, MapQuest is free and purchasing a GPS is not.

[New tool to accurately map earthquake risk](#)

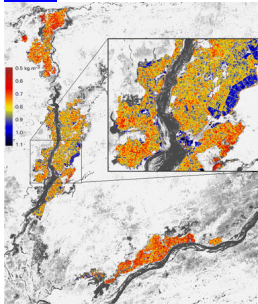
Australia researchers are squeezing more information out of seismic waves to accurately map earthquakes and predict areas at highest risk. The findings were presented at the Australian Earth Sciences Convention in Canberra. Australian National University seismologist David Robinson says the research is helping scientists better understand earthquakes. "What we're talking about here is mapping the earthquake faults in the Earth," he said.

Mr Robinson, who also works for Geoscience Australia, says conventional monitoring triangulates the location of an earthquake using the travel time of seismic waves to a number of different earthquake recording stations. The speed of seismic waves varies greatly along with the variability of the Earth and this method can provide a high level of accuracy in areas that have a high number of recording stations. But Mr Robinson says in places other than Japan and California this method can only pinpoint the location of an earthquake to within 5 or 10 kilometres. While this level of accuracy is good enough for alerting emergency services about the general location of an earthquake it is not enough to provide scientists with information they need to better understand earthquake risk.

Mr Robinson and colleagues from the Colorado School of Mines, have developed new computer programs that can use measurements from just one monitoring station to locate earthquakes to within an accuracy of 200 metres. Mr Robinson says that while traditional monitoring uses the first second or so of seismic signals, the new technique uses the entire seismic wave, which can go on for 30 seconds. "By using more of this information from a single station we can actually get away from the need to have multiple stations," he said.

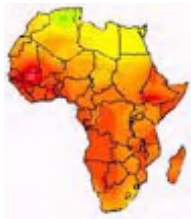
Geospatial Research, Applications, Reference Material

[A remote sensing-based irrigation performance assessment: a case study of the Office du Niger in Mali](#)



The irrigation performance of the Office du Niger in Mali, a large-scale rice-based irrigation scheme, was analysed with the use of remote sensing technology. The major advantage of remote sensing derived data over field measured data is that it provides system-wide, spatially distributed and objective information. Four irrigation performance indicators, entirely based on remote sensing, were applied at different organisational levels of the system. The surface energy balance algorithm for land model was applied to high-resolution Landsat images to calculate rice production and water consumption spatially. These maps were used to analyse the productivity of water, the uniformity of water consumption and head-/tail-enders issues at the level of the system, the five administrative zones and smaller management units (casiers).

The sustainability of the system was assessed using a long-term time series of the normalised difference vegetation index. The results were discussed and interpreted with the irrigation managers of the Office du Niger. The analysis provided new insights in the performance of the system such as existing head-tail patterns in water consumption and rice yields.



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[Summary of the PERN Cyberseminar: What are the Remote Sensing data needs of the Population-Environment Research Community?](#) (10-24 May 2010)

The Population Environment Research Network (PERN) was launched in 2001 by the International Union for the Scientific Study of Population (IUSSP) and is co-sponsored by the International Human Dimensions Programme on Global Environmental Change (IHDP). PERN is an Internet based network that is open and free to all who are interested in population environment research, and it currently has 1,700 members representing almost all countries and many disciplines. In May 2010 PERN conducted a two-week cyberseminar, co-sponsored by the Group on Earth Observations (GEO) and the NASA Socio economic Data and Applications Center (SEDAC) on the remote sensing data needs of this important research community. There were nine invited experts, approximately 570 researchers participated, and the seminar had 55 postings over a two week period. The discussion was structured around the following set of questions.

- What are the branches of population -environment research that use remote sensing data?
- Which sensors/instruments are most often used in PE research?
- What are the barriers to greater use?
- How do indicators constructed from remotely sensed data compare with those collected through field research or in surveys?
- What data integration issues are faced in combining data from different sources and resolutions?
- What are the prerequisites for inter - and trans-disciplinary research in terms of standards of data interpretation, access to data from different sources , and the social and political purposes for which the data are used?
- What are the societal benefits from the fundamental or applied research (using remote sensing data) engaged in by the PE research community?
- Are there common data needs that can be articulated by our community?
- What are the major programmed missions such as NASA's Decadal Missions (from the US National Research Council's Decadal Survey) or those of the European Space Agency, China, Brazil, India, or commercial providers, that may meet important data gaps?
- Recognizing that past research may have been constrained by the capabilities of existing sensors, what capabilities might be desired by this community for future missions (which hopefully are also technically feasible to build and launch)?
- Is there a way to build a broad consensus across the social science community for the remote sensing data that is most needed by this community? What kind of process would be required?

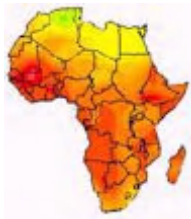
This report provides a summary of the contributions structured around these questions. See the [expert statements](#) and a [full archive](#) of all the statements and discussions.

[The use of height data](#)

Height data, also known as elevation data, is used by mapping companies to offer accurate mapping models of today's world. Mapping companies are constantly finding new ways of gathering height data in order to remain on the forefront of mapping technologies. Some ways mapping companies have captured height data are by land-form panorama, land-form profile, high resolution satellite imagery, lidar data, synthetic aperture radar (SAR), and digital photogrammetry.

Today, there are many ways mapping companies have used height data in order to make valuable resources. Here are just a few examples of the way we use height data in mapping:

- a) Consumer-based products and services with products and resources, GPS systems and GoogleMaps, mapping has become commonplace in our lives. The height data mapping companies use to make these products provide the most up-to-date and valuable information for consumers. Most phones are now equipped with mapping software, where it becomes simple to find mapping applications that use height data, such as hiking and traveling applications. Virtual [travel](#) is also another way general consumers use height data. Our world's landmarks can now be seen in 3D with just a quick click of a mouse.
- b) The most up-to-date and accurate height data is very vital in the field of land surveying and analysis in order to help with such projects as land plotting, environmental services, flood modeling, disaster preparedness, and city development. Telecommunications has also relied on the analysis of height data in order to evaluate the terrain for the improvement of mobile communication networks.
- c) Safety and accuracy in aviation has relied heavily on height data in mapping with such flight programs as collision avoidance systems, moving map displays, Intermap's topographic mapping programs, synthetic vision, and flight simulators. Accurate height data has allowed mapping companies to offer the most



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valuable resources, and mapping companies are constantly finding new ways to gather and integrate height data into new software in order to develop even more interactive mapping.

REDD+ opportunities scoping exercise: Tanzania, Uganda and Ghana

The REDD+ Opportunities Scoping Exercise (ROSE) is a tool for classifying and prioritizing potential REDD+ sub-national activities and for assessing critical constraints to project development, especially those associated with the legal, political, and institutional framework for carbon finance. The ROSE tool was developed and refined during 2009 in the course of conducting case studies in Tanzania, Uganda, and Ghana. The tool has two main stages: a 2-3 day key informant or expert workshop, and an analysis of policy, legal and institutional constraints by a small in-country team following the workshop. In the first stage, workshop participants work through a set of steps aimed at identifying high potential REDD 'project types' and the main legal, political, and institutional 'gaps' constraining development of the identified project types. The ROSE tool is therefore relevant to the development of REDD+ at both the sub-national and national levels; in the three case study countries, the ROSE studies have provided key inputs to national 'REDD+ Readiness' processes. This report explains the ROSE methodology and process, and summarizes key findings of the three case studies, including a brief description of the high potential project types identified, and the main gaps or constraints to realising that potential. Contacts: Michael Richards at mrichards@forest-trends.org or Jacob Olander jolander@ecodecision.com.ec.

Ghana's right to information bill: Opportunity for SDI as a technical infrastructure - Article under Review for the International Journal of Spatial Data Infrastructures Research, Submitted on 12 April 2010

Information is an important resource in the 21st century knowledge-based society. Access to public sector information is being viewed as an important path to strengthening democracy, good governance, public service and sustainable development. Ghana is about to enact a right to information law (now The Right to Information Bill) to provide a legal framework for making public sector information accessible to the public. However, while the legal framework is necessary, it is not sufficient to ensure real access to public sector information by the public. This paper highlights the need for designing policy and institutional frameworks in general and a technical infrastructure in particular for actuating the provisions of the anticipated law. Therefore, the paper assesses the opportunities and imperatives for building SDI, at least, as part of the technical infrastructure for making public sector information discoverable, retrievable and usable to the public. Steps are then proposed for creating the SDI, including building institutional mandate, creating a metadata catalogue, digitalization of analog data/information and the development of plans to strategically manage and enhance the organic growth of the SDI. The paper is significant in that it makes anticipatory contribution to the discourse on the design of policy and institutional frameworks in general; and technical infrastructure in particular to support the implementation of the Right to Information Law in Ghana.

Training Opportunities

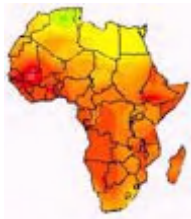
Have you signed up to receive [SDI-Africa Newsletter](#) notices? It only takes a minute, and then the GSDI Association can notify you when a new issue of the SDI-Africa newsletter is available, plus alert you to particular GSDI announcements (like a call for GSDI grants, or a call for papers for a GSDI 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.

Training Course: Climate change adaptation in agriculture and natural resources management, 28 February - 11 March 2011, in East Africa

The course is designed for mid-career professionals who are engaged at higher levels and deal with policy making either from the research side (as advisor), government side, or from civil society who aim to have a full understanding of climate change adaptation concepts, be able to effectively and meaningfully contribute to the debate on climate change adaptation, either in the policy process and/or in providing knowledge to the policy process.



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The Netherlands government (NFP) fellowships are available for this course. Applications should be submitted to Wageningen UR Centre for Development Innovation before 1 September 2010.

For details, contact: Terwisscha van Scheltinga (Catharien), Wageningen University at Catharien.Terwisscha@wur.nl or www.ess.wur.nl/UK/People/Catharien+Terwisscha+van+Scheltinga/, <http://portals.wi.wur.nl/climatechange>, www.genderandwater.org.

Online Courses: Community-centered adaptation to climate change

The Center for Sustainable Development (CSDi) specializes in providing sound, evidence-based information, tools and training for humanitarian development professionals worldwide. The Center announces a pair of online field courses on community-centered adaptation to climate change. Participants work with real communities to develop projects ready to present to donors. Urban participants can partner with participants in developing nations to gain community contact.

- Adapting to Climate Change 2: Sustainable Implementation, September 7 - October 18 (Six Weeks).

Visit the adaptation professional group at CSDi's [Development Community](#) and join colleagues in sharing resources & collaborating online. Contact: Tim Magee at tim.magee@csd-i.org or Online.Learning@csd-i.org for further information.

Training Workshops for PCSWMM/SWMM5, South Africa

Every year Computational Hydraulics Int. (CHI) hosts a number of SWMM5 and PCSWMM Modeling Workshops in South Africa. At these professional workshops, attendees are trained in the use of both the latest US EPA Stormwater Management Model (SWMM), and the new PCSWMM 2009 graphical decision support system. By attending a workshop, participants become proficient in the use of the software and learn how its application can enrich stormwater drainage and sanitary system modeling and design.

- Cape Town, October 12, 2010
- Kimberley, October 19, 2010
- Kruger National Park, October 26, 2010
- Durban, November 02, 2010
- Gauteng, November 09, 2010

Free ESRI Courses

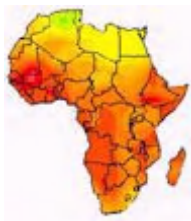
Free online course modules from ESRI's Virtual Campus site. Learn the basics of many of their software packages and extensions or take some concept courses such as a review of projections.

ESRI Eastern Africa Hands-on Training for GIS Professionals



The following courses are offered at the ESRI Authorized Learning Centre in Upper Hill, Nairobi, Kenya.

	Duration (Days)
Fundamentals of ArcGIS Desktop	
• ArcGIS Desktop 1: Getting Started with GIS	3
• ArcGIS Desktop 2: Tools and Functionality	4
• ArcGIS Desktop 3: Workflows and Analysis	3
• Data Production and Editing with ArcGIS	
• Field Data Collection Using ArcPad and ArcGIS Desktop	3
• Building Geodatabases	4
• Data Production and Editing Techniques	4
Analysis with ArcGIS	
• Performing Analysis with ArcGIS Desktop	4
Cartography with ArcGIS	
• Creating and Publishing Maps with ArcGIS	4
Enterprise GIS	
• Introduction to ArcGIS Server	3
• Introduction to the Multiuser Geodatabase	3
• Managing Editing Workflows in a Multiuser Geodatabase	4
Programming with ArcGIS	
• Introduction to Programming ArcObjects using .NET	4
• Introduction to Geo-processing using Python	3



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Added new courses focusing on ENVI: the Image Processing Software for processing and analyzing geospatial imagery.

- Introduction to Remote Sensing with ENVI 3
- ENVI for GIS 3
- Exploring ENVI 5
- ENVI for Defense and Intelligence 4

Contact: ESRI Eastern Africa at: training@esria.co.ke, telephone: +254 20 2713630/1/2 or fax: +254 20 2713633.

ESRI South Africa course schedule for August 2010

Contact: Midrand: Queen Mofokeng, gmofokeng@esri-southafrica.com; Durban: Patricia van Schalkwyk, pvenschalkwyk@esri-southafrica.com; Port Elizabeth: Queen Mofokeng, gmofokeng@esri-southafrica.com; Cape Town: Kathi Wöhl, kwohl@esri-southafrica.com.

L'Ecole Régionale post-universitaire d'Aménagement et de gestion Intégrés des Forêts et Territoires tropicaux (ERAIFT) [Regional School on Integrated Management of Tropical Forests and Territories] –



Promotion : inscriptions ouvertes, Kinshasa, République Démocratique du Congo. Le cursus de l'ERAIFT aboutit à l'obtention d'un Diplôme d'Etudes Supérieures Spécialisées (DESS). Ce diplôme est l'équivalent d'un Master du système « LMD » (Licence, Master, Doctorat) des Accords de Bologne. Il est reconnu par le Conseil Africain et Malgache pour l'Enseignement Supérieur (le CAMES). Le programme du DESS comprend 16 chaires dont l'enseignement s'étend sur une période de 12 mois. L'étudiant dispos ensuite de 6 mois pour rédiger son mémoire. Le contenu de ce dernier repose sur l'approche systémique, et s'inscrit

dans le cadre de l'aménagement intégré du territoire, du développement humain, durable et écologiquement viable, de la lutte contre la pauvreté et de la gestion rationnelle de l'environnement. L'autre grade décerné par l'ERAIFT est le Diplôme de Philosophiae Doctor (Ph.D.) en Aménagement et gestion intégrés des forêts et territoires tropicaux. Bourses disponibles, mais limitées en nombre. Contact: info@eraift.org.

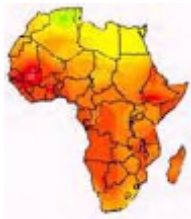
Short-courses offered by RECTAS in 2010, Ile-Ife, Nigeria



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

ITC Distance Learning - Certificate

- Principles of Geographical Information Systems (7 weeks). Starting date: 6 September 2010. Deadline for application: 16 August 2010. [Register](#).
- Spatial Decision Support Systems (8 weeks). Starting date: 11 October 2010. Deadline for application: 20 September 2010. [Register](#).
- Learning IDL for Building Expert Applications in ENVI. Starting date: 25 Oct 2010. Deadline for application: 4 October 2010.
- Digital Terrain Model extraction, processing and parameterization for Hydrology (3 + 3 weeks). Starting date: 29 November 2010. Deadline for application: 8 November 2010. [Register](#).
- Principles and Applications of Remote Sensing and GIS in Natural Resources Management at KNUST, Kumasi, Ghana (12 weeks). Starting date: 20 September 2010. [Register](#).
- Principles of Geographical Information Systems
- Modern Techniques for Environmental and Sustainable Development of Earth Resources, Ethiopia, 2 weeks
- Geoinformatics, with ARU, Dar es Salaam, Tanzania With specialisation modules: Digital Photogrammetry and Remote Sensing, GIS Operation, Cartography and Geo-Visualisation, Tanzania, 9 months
- Geoinformatics with GSSM, Accra, Ghana With specializations: GIS Operations and Cartography and Visualization, Ghana, 9 months
- The Application of GIS and Remote Sensing to Geologic Mapping and Mineral Resources Exploration, Tanzania, 2 weeks
- Participatory Approaches to Slum Upgrading and Management, Kenya, 2 weeks



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- [Digital Terrain Model extraction, processing and parameterization for Hydrology](#), 3+3 weeks

ITC Refresher Courses 2010

Refresher courses, which are certificate of attendance courses (mostly of two-week duration) organised for alumni in their home countries or regions, are meant to increase the impact and prolong the effect of earlier training. In 2010, ITC will co-organise the following refresher courses:

- Participatory Approaches to Slum Upgrading and Management (Kenya)
- [Modern Techniques for Environmental and Sustainable Development of Earth Resources](#) (Ethiopia)
- [GEONETCast-Toolbox for natural and water Resource Management](#) (Ethiopia)
- [Preparing for Adaptations to Climate Change in West Africa](#) (Burkina Faso)
- [Strengthening Local Land Governance](#) (Tanzania)
- The Application of GIS and Remote Sensing to Geologic Mapping and Mineral Resources Exploration (Tanzania)

More information will be available soon at www.itc.nl/Pub/Study/CourseFinder

[ITC Education Brochure 2011-2012 online](#)

Read the new ITC Education brochure with all the degree, diploma and certificate programmes in geo-information science and earth observation starting in 2011.

[Programme de Formation au CRTS 2010](#), Maroc

Le Centre Royal de Teledetection Spatiale est l'Institution Nationale responsable de l'utilisation, de la promotion et du developpement de la teledetection spatiale au Maroc. Il est charge de coordonner et de gerer les programmes nationaux de teledetection spatiale en partenariat avec les ministr`res, les universites et les operateurs privées.

[Geoinformatics \(GFM.4\) joint education diploma course of ITC and ARU](#), September 2010 - June 2011 (9 months), Dar es Salaam, Tanzania

The course is run at [Ardhi University](#) (former UCLAS) campus in Dar es Salaam, Tanzania. The aim of the course is to provide participants with the theoretical education and practical training needed to contribute to the digital production of maps and geoinformation using appropriate, state-of-the-art technology with in-depth knowledge in one of the specific aspects of the production process. GFM4 Course [Application Form](#), Contact: Head Geomatics Department, Ardhi University at geomatics@aru.ac.tz.

[Short course: Introduction to GIS Standards](#), September 6-7, 2010, University of Pretoria, South Africa

The course provides an introduction to geographic information standards such as those developed by the ISO/TC 211, Geographic information/Geomatics and Open Geospatial Consortium (OGC). Course content shows where to find these standards, how to read, interpret and implement them.

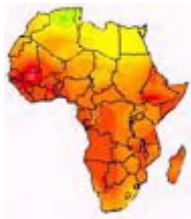
Funding Opportunities, Awards, Support

[Support for International Scientific Meetings](#)

The Academy encourages the organization of international scientific meetings in Third World countries by providing financial support in the form of travel grants for principal speakers from abroad and/or participants from the region. Important: TWAS can only provide support to organizers of scientific events held in developing countries to enable scientists from developing countries to attend their meetings. In other words, TWAS does not provide support to individual scientists wishing to attend a scientific event, even if the event is taking place in a developing country. Deadline for applications: 1 December 2010 for meetings to be held during July-December 2011.

[Grants for Computer Science Meetings in African Countries](#)

With funds provided by [Microsoft Research](#) Ltd, TWAS and [AAS](#) encourage the organization of scientific activities on the theme of Computer Science in Africa by offering financial assistance to the organizers of conferences, workshops, symposia and special meetings held in Africa. The support is provided in the form of travel grants for principal speakers from abroad and/or participants from developing countries other than the country where the meeting is held. Supported speakers should be from non-profit research organizations. The amount provided does not exceed Euro 4,000. Important: Only *organizers* of scientific events held in Africa can apply for support, not individuals wishing to attend such events. Deadline: December 2010 for meetings to be held during July–December 2011.



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2010 Legatum Africa Awards for Entrepreneurship: Call for entries

Legatum, a privately owned international investment group, and Omidyar Network, a philanthropic investment firm is now receiving entry for the 2010 Legatum Africa Awards for Entrepreneurship, one of the continent's most prestigious business awards.

The Legatum Africa Awards programme recognizes and rewards African business leaders who embody the entrepreneurial spirit and demonstrate the qualities required to succeed in business - determination, a commitment to excellence, innovation and profitability.

"This is the third year that Legatum has offered an award for Entrepreneurship in Africa" said Alan McCormick, Managing Director of Legatum, "and over that time we have found many dynamic entrepreneurs across the continent, whose businesses are building prosperity for their communities".

Leaders of small and medium sized enterprises (annual revenues of \$2 - \$25 million) have the opportunity to submit online entries at www.africaawards.com until 31 August 2010. Applicants will be evaluated across a unique set of criteria to determine the winner.

TWAS Fellowships 2010: Call for applications now open

Postgraduate, postdoctoral, visiting scholar and advanced research fellowships available to scientists from developing countries. Deadlines vary. TWAS is now accepting applications for its postgraduate, postdoctoral, visiting scholars and advanced research fellowship programmes. The fellowships are offered to scientists from developing countries and are tenable at centres of excellence in various countries in the South, including Brazil, China, India, Malaysia, Mexico, Pakistan and Thailand. Eligible fields include: agricultural and biological sciences, medical and health sciences, chemistry, engineering, astronomy, space and earth sciences, mathematics and physics. Women scientists are especially encouraged to apply.

Call for applications: IFS Research Grants

Applications for IFS Research Grants are welcome from young scientists in developing countries to do research on the sustainable management, use or conservation of biological or water resources. This broad statement covers natural science and social science research on agriculture, soils, animal production, food science, forestry, agroforestry, aquatic resources, natural products, water resources, etc. Applications are accepted all year and are to be made on an IFS Application Form. For more details:

- <http://www.ifs.se/Programme/eligibility.asp>,
- http://www.ifs.se/Forms/how_to_apply.asp,
- http://www.ifs.se/Forms/list_of_all_forms.asp.

Contact Details: http://www.ifs.se/Forms/how_to_apply.asp. Closing date: 30 December 2010.

Benefit-sharing Fund: Call for Proposals 2010

The Call for Proposals 2010 under the Benefit-sharing Fund of the International Treaty, which will invest more than USD 10 million in projects globally, is now opened for its biennial cycle 2010-2011. Any governmental or non-governmental organization, including genebanks and research institutions, farmers and farmers' organizations and regional and international organizations, based in countries that are Contracting Parties eligible for funding, may apply for grants until 8 September 2010, 24:00 Rome time. The thematic focus is helping ensure sustainable food security by assisting farmers to adapt to climate change through a targeted set of high impact activities on the conservation and sustainable use of plant genetic resources for food and agriculture.

This focus is achieved within the agreed priorities of the Benefit-sharing Fund, namely

- Information exchange, technology transfer and capacity-building;
- Managing and conserving plant genetic resources on-farm; and
- Sustainable use of plant genetic resources.

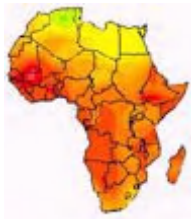
Contact: Treaty-Fund@fao.org or by phone at +39 06 5705 3554.

International Fellowship: Bringing together foresters from around the world

The WFI Fellowship Program brings forestry and forest products professionals from around the world to work at the World Forest Institute for 6 to 12 months. Over 80 Fellows from 25 countries have participated in the program. For consideration, Fellowship candidates should meet these minimum qualifications:

- Bachelor's degree or equivalent in the field of forestry, natural resources, or other related degree.

Alternatively, candidates with at least four years of forest-related work experience may apply.



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- Proficiency in English, both written and spoken.
- At least 21 years of age.
- Initial research proposal on a topic relevant to forestry in the home country. The project should take advantage of forestry in the Pacific Northwest.
- Ability to be self-motivated, to work independently towards a clear research goal or output, and to work with colleagues from diverse backgrounds.
- Obtain funding for the Fellowship. [Download a cost description.](#)

WFI brings Fellows in three times each year: February 1, May 1, and October 1.

[ACM SIGSPATIAL GIS 2010 Google travel grants for female students](#)

As part of Google's ongoing commitment to support women in computing, we are pleased to announce the 2010 ACM SIGSPATIAL GIS Google Female Student Grants to encourage more female computer science students to attend and participate in the ACM SIGSPATIAL GIS 2010 Conference, November 2-5 2010, San Jose, California, USA. The winners will receive \$500 USD towards conference travel-related costs.

All female computer science students enrolled and pursuing a PhD degree in Computer Science, Computer Engineering, or technical field related to conference subjects are invited to apply by submitting a CV and 1-page statement (no more than 600 words) about why you wish to attend the conference and why attending it is important to your research, work, and/or future career. Application to be submitted to: ltoma@bowdoin.edu with subject heading "Google ACMGIS 2010 travel grant" and containing a single pdf document. Deadline: 17 September 2010.

[International Fellowships in USA for Women 2010](#)

AAUW (formerly known as the American Association of University Women) has a long and distinguished history of advancing educational and professional opportunities for women in the United States and around the globe. One of the world's largest sources of funding for graduate women, AAUW is providing more than \$3 million in funding. AAUW supports women who are not United States citizens or permanent residents, women breaking through educational and economic barriers as aspiring scholars around the globe, teachers and activists in local communities, women at critical stages of their careers, and those pursuing professions where women are underrepresented. Scholarship value/inclusions:

- Master's/Professional Fellowship: \$18,000
- Doctorate Fellowship: \$20,000
- Postdoctoral Fellowship: \$30,000

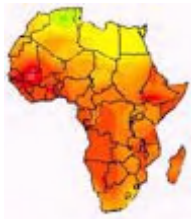
Recipients are selected for academic achievement and demonstrated commitment to women and girls. Questions about applications must be directed to the Iowa City office. Do not contact the AAUW office in Washington, D.C., or local branches for application information. Please call 319/337-1716 ext. 60, e-mail aauw@act.org, or write to the customer service center at AAUW, Dept. 60, 301 ACT Drive, Iowa City, IA 52243-4030. Application Deadline: 1 December 2010.

[African Union Science Awards](#)

The African Union Continental Scientific Award - this award is open to both outstanding male and female researchers. The African Union realizes the importance of science, technology and innovation as an indispensable tool for driving socio-economic progress. It is thus essential to strengthen the capacities of African researchers and scientists by facilitating the integration of their efforts and competencies for the sustainable development of the African continent. In this programme a prize of 100,000 USD will be given to the outstanding African scientist as a mark of recognition of the African Union to acknowledge Africa's children who have had the merit to incontestably emerge in science and technology. Application forms for the African Union Continental Scientific Award should be received by the Commission not later than 9 September 2010, African Union Day.

[FGEF Grants for Biodiversity Protection and Climate Change Projects in Africa](#)

The French Global Environment Facility (FGEF) has grant available to support projects related to biodiversity protection and climate change in Africa. Under its second phase of Small-Scale Initiatives Program (SSIP) for 2009-2010, it is aiming to strengthen civil society contribution for the conservation of the environment in Central and Western African countries, Madagascar and Mozambique. The eligible countries are Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, The Gambia, Ghana, Guinea, Guinea-Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Chad, Togo, Cameroon, Central African Republic,



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Republic of The Congo, Democratic Republic of the Congo, Gabon, Equatorial Guinea, Sao Tome-and-Principe, Rwanda, Burundi, Mozambique and Madagascar.

Priority will be given to French speaking countries. About 50 projects are expected to be funded during the 2 years of the program, 8 of which could be implemented in non French-speaking countries. The eligible themes concern biodiversity protection and fight against climate change, along with improvement of local populations living standards. NGOs, professional bodies, women and youth groups or associations and also private companies and INGOs with local partnerships can apply. The maximum grants available for each project is Euros 50,000. Deadline for proposal submission: 15 September 2010.

Employment Opportunities

Geographic Information Systems Analyst, Mbeya, Tanzania

The successful candidate will gain exposure to a broad range of GIS - based activities related to wildlife conservation and environmental management, in addition to the opportunity to develop practical skills in GIS and related technologies.

The position will suit a recent undergraduate with a good degree in geography, surveying, wildlife conservation, computer science or a similarly relevant subject.

Specific responsibilities will include spatial analysis, digitizing, data management, maintenance of software licenses, IT support and report writing. Some field work and travel within Tanzania is expected. Experience of GIS is desirable, but the opportunity to develop these skills can be provided, so is not a prerequisite. Excellent IT skills along with fluency in Swahili and English and a demonstrable ability to self - learn and troubleshoot technical problems are essential.

To apply, please post or email your CV, contact details of at least 2 referees and a covering letter explaining your suitability for this position to: The Project Director, WCS GIS & RS Project, PO Box 2291, Mbeya, Tanzania or gpictonphillipps@wcs.org. Closing date for applications is 31 August 2010.

Two volunteer field assistants needed for nationwide ape and elephant survey in mainland Equatorial Guinea

Two volunteer field assistants to support, help and manage field monitoring teams with data collection for a nationwide ape and elephant survey in mainland Equatorial Guinea, Central Africa are required. Equatorial Guinea is home to two endangered ape species (i.e. Gorilla gorilla and Pan troglodytes) and the endangered forest elephant (*Loxodonta cyclotis*), however we lack current information on their status in this country. Therefore, Conservation International, in collaboration with the Max-Planck Institute for Evolutionary Anthropology, has planned to design and conduct a nationwide survey during 2010-2011. Specifically, this survey will help to update existing information on ape and elephant population distribution, abundance and threats throughout the country.

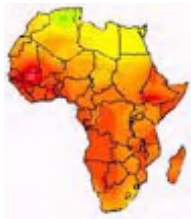
The appropriate candidates are expected to hold at least a Bachelor's degree and possess some understanding of basic statistical concepts (particularly of the line transect methodology). They should have prior field experience, preferably under hot/humid climate. They should be physically fit, and be able to work independently under isolated conditions (camping, with limited access to modern conveniences). Conversational level of Spanish language is required.

Successful applicants must provide proof of international health insurance for 9-month study period. Submit a letter of application, your resume, and contact for three references by e-mail to: Hjalmar Kuehl (kuehl@eva.mpg.de) with a copy to: Heidi Ruffler (h.ruffler@conservation.org)

ICT OFFICER, Banjul, Gambia

The Commission of the African Union invites applications from citizens of Member States for a position of ICT Officer in the Department of Political Affairs. The incumbent shall diagnose and resolve complex technical problems, associated with computer hardware and software interrelationships/dependencies and ensure availability to system users.

- The candidates must have a minimum of a University Degree in Computer Science and should be certified systems engineers in server Administration, network, infrastructure and messaging suites. A relevant advanced degree (Masters or equivalent) will be an added advantage.
- Minimum of five (5) years of experience in server hardware installation and maintenance, server infrastructure, maintenance capacity planning and database application installation and basic maintenance.



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- Proficiency in one of the African Union working languages. Knowledge of one or several other working languages would be an added advantage.
- Must preferably be between 25 and 35 years old.

Applications must be received not later than 23 August 2010 and addressed to: The Director of Administration and Human Resource Development, AU Commission, P.O. Box 3243, Addis Ababa, Ethiopia; Fax: 00251-11-5525840/5510430; E-mail: au-recruits@africa-union.org.

Project Coordinator, Goma, DRC

Under the overall supervision of the Chief of the Disaster, Post-Conflict and Safety Section and the guidance of the Regional Office for Africa in Nairobi, the Project Coordinator is responsible for the management and development of the Programme activities in the Eastern Province of DRC as well as in Kinshasa with the HPM. The Project Coordinator will collaborate with UN-Habitat's Disaster Management Programme in Geneva on matters relating to inter-agency collaboration. He/She will lead and supervise a team of international and national programme staff and collaborate with relevant ministries and local authorities.

- Advanced university degree in housing, urban planning, engineering, environmental management or other field relevant to the respective programme.
- At least seven years of field-based experience in programme/ project planning and implementation, preferably with international organizations. A minimum of five years of experience in disaster mitigation and risk reduction is desirable.
- English and French are the working languages of the UN Secretariat. For this position fluency in French is required. High level of proficiency in English is an advantage
- Experience in stakeholder driven strategic planning and implementation processes.
- Proficient in Database Management, Word, Excel, Email (Lotus Notes), Internet and preferably programme management applications.

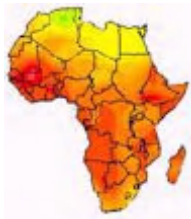
Applicants are requested to submit a United Nations Personal History (P11) form as well as a CV and a cover letter via email to: Hilda Rajab Disaster, Post-Conflict and Safety Section, United Nations Human Settlements Programme, E-mail: hilda.rajab@unhabitat.org. Copy to: Daniel Lewis, Chief Disaster, Post Conflict and Safety Section, P. O Box 30030, UN-HABITAT, Nairobi, Kenya, E-mail: dan.lewis@unhabitat.org. Deadline for applications: 9 August 2010.

Alert & Prevention Analyst – (ACSRT 01/2010REG), Algiers, Algeria

The Commission of the African Union invites applications from citizens of Member States for a position of Alert and Prevention Analyst in the Department of Peace and Security. The incumbent shall assess developments related to terrorism in African and worldwide; monitor and assess the leadership, motivations, plans and intentions of terrorist groups and their sponsors; produce a range of current and longer-term intelligence products, brief key AU Decision Makers and provide tactical analytic support to law enforcement and intelligence operations; assist in the preparation of research studies in relation to the prevention and combating of terrorism; Geographical marking of the terrorist phenomenon (Use and or preparation of GIS products); populate and maintain counterterrorism databases and work in conjunction with other Divisions and the Early Warning Unit to ensure data integrity; conduct Risk Analysis and Critical Assets Analysis; assist in development and documentation of risk management products, including risk registers, risk scoring templates, risk mitigation plans, and contingency plans using tools (such as Monte Carlo analysis, including Crystal Ball)

- Candidates must have a minimum of a Bachelor Degree in international affairs, national security studies or related subjects, preferably with a strong African focus or other regional expertise, with a background in research and analysis.
- Must have five (5) years of relevant experience in legal positions in government, public or private sectors.
- Experience with quantitative analysis tools and tools for Data Treatment and Processing (Data Where Housing and Data Mining)
- Knowledge of scheduling software and Electronic Planning tools such as Microsoft Project and Primavera Project Planner
- Command on computer, particularly decision-making tools and Geographical Information Systems
- Applicants selected will be subject to a government security investigation and must meet eligibility requirements for access to classified information.

Applications must be received not later than 23 August 2010. Contact: au-recruits@africa-union.org.



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[Training Specialist – \(ACSRT-03/2010REG\)](#), Algiers, Algeria

The Commission of the African Union invites applicants who are citizens of Member States to apply for the post of Training Specialist within the Peace and Security Department in Algiers, Algeria. The incumbent shall: assist in the implementation of the Centre's strategies and in developing training programmes; assist Member States in designing special prevention and counter-terrorism training programmes; supervise the technical staff and co-ordinate partner activities to ensure that programme objectives are attained; supervise training, monitoring and evaluating activities relating to special prevention and counter-terrorism training; possess a vast knowledge of communication and security systems (information and physical safety);

- Candidate must have at least an international Bachelor's Degree in science of education, philosophy, social sciences, management or related discipline.
- Possess several years' working experience in the field of education and training, with most of them in security/law enforcement/military/paramilitary, preferably counter-terrorism.
- Experience in implementing and/or managing educational programmes involving, preferably, training of trainers and/or policy reform components;
- Proven ability to respond promptly to a rapidly changing environment and to work comfortably in an often unstable security environment;
- Proficiency in one of the African Union working languages (Arabic, English, French and Portuguese) is required. Knowledge of one or more of the other AU working languages would be an added advantage.
- Must preferably be aged between 25 and 35 years.

Applications must be received not later than 23 August 2010 and addressed to: The Director of Administration and Human Resource Development, AU Commission, P.O. Box 3243 Addis Ababa, Ethiopia; Fax: 00251-11-5525840/5510430; E-mail: au-recruits@africa-union.org.

[Senior agricultural economist/ Team leader](#), Nairobi, Kenya

ILRI seeks to recruit a Senior Agricultural Economist and Team Leader to play a key role within the market opportunities theme in leading ILRI's evolving and expanding portfolio of research addressing smallholder livestock producer competitiveness and technology uptake. The responsibilities will include:

- Lead and manage a geographically dispersed international team of economists, social scientists, and livestock scientists addressing determinants of smallholder productivity and access to markets, inputs and knowledge services, and analyzing and testing options for increased productivity and welfare, across a range of countries in Sub-Saharan Africa, and Asia.
- Lead conceptual development of ILRI's work on smallholder competitiveness in multiple crop-livestock systems, and support development of evidence for sustainable productivity interventions to guide appropriate livestock technology and policy development and investments.

Applicants should possess:

- A Ph.D. in Agricultural Economics, Economics, or other Social Science with application to agriculture or rural development, with a minimum of 8 years of experience post-PhD;
- A proven research record reflecting experience in research design, quantitative and qualitative analytic methods and producing peer-reviewed outputs;
- Demonstrated strong experience with analysis of smallholder household production and competitiveness, technology uptake, access to markets and services;
- Strong econometric and mathematical modeling skills, and the ability to apply them in pro-poor development research;

Deadline: 1 September 2010 until the position is filled. Contact: Loyce Mbwaya at L.Mbwaya@cgiar.org, application submitted to: recruit-ilri-Ken@cgiar.org.

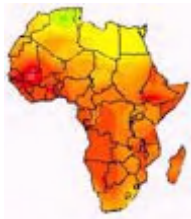
[Science Officer](#), Paris, France

The International Council for Science (ICSU) is seeking a Science Officer to assist with the planning and implementation of ICSU's initiatives.

The Science Officer will assist with the planning and implementation of ICSU's initiatives, with a focus on sustainability research including global environmental change. Examples of work tasks include support to ICSU committees, interaction with ICSU partners and members, and coordination of international research programmes.

ICSU is seeking candidates with the following:

- An advanced scientific degree (preferably Doctorate) in a relevant natural or social science discipline and a further 5 years research or science management experience; and a broad interest in science.



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- Demonstrated experience in science project/programme development and coordination.
- Excellent knowledge of English and preferably some knowledge of French and/or other languages.
- Good working knowledge of MS Office systems, and of electronic databases and Web sites.

Applications, with 'Science Officer' in the subject line, should be sent to recruitment@icsu.org and addressed to Professor Deliang Chen, Executive Director, International Council for Science (ICSU), Email: jacinta.legg@icsu.org, Closing Date: 16 August 2010.

Post Doctoral Fellow

The post doc will participate in the multi-centre Global Futures project which is coordinated by IFPRI. The post doc will work closely with post docs at ILRI and CIMMYT who will also be based in Nairobi. The ICRAF post doc will focus on enhancing modeling capability and empirical data to be able to assess the likely economic impacts of agroforestry and other natural resource management interventions. The role includes the following responsibilities:

- Develop methods for improving CGIAR modelling capability in agroforestry and other natural resource management intervention areas. This may involve the direct enhancement of global models like IMPACT or the enhancement of other models that could be linked up (e.g. DSSAT).
- Build up relevant global databases with which to undertake ex ante impact assessments for agroforestry and natural resource
- Collaborate with other ICRAF staff to identify priority ex ante impact assessments and to identify key model parameters, such as likely adoption trajectories and productivity, equity, income, and environmental service impacts.
- Support increased use of ex ante impact assessment tools within ICRAF.
- As with all scientists, generate and disseminate scientific publications

Requirements

- PHD in natural resources or environmental, agricultural, or development economics preferred
- Work experience in modeling is an added advantage
- Experience in modelling of large scale or multi-country economic or natural resource management systems.
- Use of GAMS programming and familiarity with important models used in the Global Futures project - IMPACT, DREAM,

All correspondence should be addressed to the Human Resources Unit, World Agroforestry Centre (ICRAF); P. O. Box 30677, Nairobi, Kenya or via email: icrafhr@cgiar.org. Applications will be considered until 15 August 2010 or until a suitable candidate is identified and selected.

Other

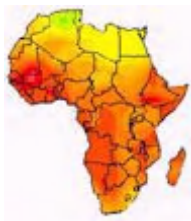
Volcanic theory of interest to diamond explorers

WITS scientists and their international partners have published research that is set to stir debate on the inner workings of the earth and give diamond mining companies pause for thought. For the past decade, scientists have been debating whether volcanic hot spots like Hawaii are caused by great plumes of molten rock rising from deep within the mantle like blobs in a lava lamp. Hawaii does not fit the typical volcano pattern because it lies in the middle of a tectonic plate rather than at its edges, an anomaly some say can be explained by a crack or fissure in the plate.

Now, research by an international team, including scientists from the University of the Witwatersrand, that was published earlier last month in the journal Nature, has added fresh weight to the mantle plume idea.

Their study links the location of diamond-bearing volcanic kimberlites to the edges of unusual expanses of rock deep in the mantle, which have low seismic velocity. This suggests their composition or temperature differs from that of the surrounding material. Since the earth's interior is too hot to probe directly, scientists use seismic tomography to create a picture of it, just as doctors use CAT-scans to map the inside of a body. The scans show two of these large areas of rock, one beneath southern Africa and the other under the southern ocean.

The rarity of diamonds means the merest hint of a new way of honing in on potential new sites is likely to meet with keen interest from mining companies. The last globally significant diamond mine to open in SA was De Beer's Venetia, in Limpopo, in 1992. Diamonds are formed under high pressure at least 150km within the earth's mantle, and are brought to the surface by volcanic eruptions in rocks called kimberlites, named after Kimberley. The team combined tectonic-plate reconstructions and seismic tomography images

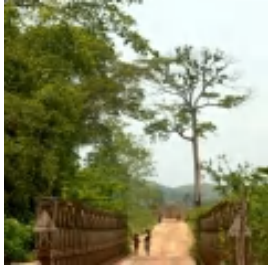


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of the interior of the earth over the past 540- million years. This is the first time a team has put together such a long geological history of the deep mantle, according to a statement issued by Prof Kevin Burke of the University of Houston, one of the paper's authors. They found 80% of the sites where kimberlites had erupted in Africa once lay along the edges of the southern African deep low- velocity zone. Local geologists who were not involved have mixed views on it. The Geological Society's executive manager, Dr Craig Smith, who doubts whether diamond-bearing kimberlites are formed by plumes at all, says the research is "a nice advance on the science front". But he is not convinced it will have immediate applications for diamond exploration.

[GAF REDD Pilot Projects in Congo Basin](#)



GAF and a consortium of European and African partners submitted a proposal for the European Commission Framework Programme 7 (FP7) GMES Space Call in 2009, and were notified that this proposal received one of the highest evaluation points achievable in the FP7 programme. The focus of the programme is related to forest monitoring of deforestation and forest degradation which is required for the United Nations Framework Convention on Climate Change (UNFCCC) Reducing Emissions from Deforestation and forest Degradation (REDD) and quantifying carbon credits in a post-2012 scenario. The main objective of the GAF co-ordinated "Reducing Emissions from Deforestation and Degradation in Africa (REDDAF)" project is to further build on the existing company experiences in implementing a

REDD Pilot Project in Cameroon, and initiate such a Pilot in a new country in the Congo Region. The methods tested in Cameroon, will be fully implemented in the Central African Republic (CAR) which is one of the countries that has been actively following the REDD process. The UNFCCC Focal Points in both Cameroon and CAR have supported and endorsed the REDDAF concepts and objectives. The main activities for the project will include:

- User Requirements in CAR to identify the needs of stakeholders in terms of specific policy drivers, working practices and decision making cycles as well as the technical specifications for reporting.
- Reference scenarios for estimating deforestation and degradation; remote sensing analysis will provide forest area maps and forest cover change maps applicable for a national REDD scenario. Developing methods for degradation assessment,
- Testing a 'direct' approach to biomass mapping using new sensor data (based mostly on the radar sensors), Undertaking technology transfer and capacity building to the countries.

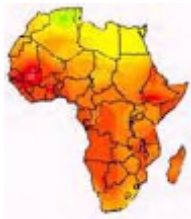
A key objective in the REDDAF project is to provide improved methodologies to develop pre-operational service chains which will enable the REDD services and products to be provided at a national scale. These pre-operational service chains can then be adapted in other countries involved with REDD implementation. The REDDAF project will contribute to the scientific and conceptual understanding of the technical challenges, whilst taking note of the most recent developments in the scientific and policy communities.

[MainOne fibre optic cable launched in Nigeria](#)

MainOne Company Limited launched the commercial operation of its fibre optic cable technology, which is expected to revolutionize Information Communication Technology (ICT) in Nigeria. The technology which took off in Lagos cost about \$240 million (N36 billion) and will provide international video conferencing with clear audio and visual quality irrespective of location. Chairman of the of the company, Mr. Fola Adeola, said the submarine cables were laid from Portugal to Lagos covering a distance of about 7,200 kilometres.

The MainOne chairman acknowledged that a major difficulty was encountered in executing the project expected to catalyze a major change in Africa's information and communication, especially while laying the sub-sea cables. According to him, in some countries, the firm was required to sign papers and pay for right of way, while others required the company to sign an undertaking not to damage subsea cables already in place in the course of laying its own.

The technology "will be transmitting at a speed of 4.92 terabytes about five terabytes. What has been made available is faster than the 40 gigabytes that is available in Europe." Okpeke explained that the cable made landing in Ghana, Morocco, Canary Islands, Senegal and Ivory Coast. The managing director added: "The cable will deliver unprecedented broadband capacity to West Africa more than ten times what is currently available. With its cable systems now turned on, MainOne is poised to champion a communications revolution in Africa by impacting businesses, governments and individuals by providing higher bandwidths and exceptional speed at a lower cost.



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The Acting Vice Chairman Nigeria Communications Commissions (NCC), Dr. Bahire Gwandu, said that because the NCC's desperation for a fibre optic cable to rollout in the country forced it to slash the firm's license to N25 million and called on the firm to reciprocate the gesture by making sure that Nigerians have access to the service at the cheapest available rate. The technology was later demonstrated with teleconferencing between Lagos and London, Bangalore in India, South Africa and Tenerife."

[Eassy sub-marine cable set to go live](#)

Construction of the East Africa Sub marine cable system (EASSy) has been complete and the facility will go live later this week, Zantel Wholesale and Roaming Director Nahaat Mahfoudh told the 'Daily News' on Monday. He said construction started in Maputo, Mozambique in December 2009 and landed in Dar es Salaam in April 2010. EASSy becomes the second undersea fibre optic cable to land in Tanzania after SEACOM which is currently operational. The cable has been formally handed over to the West Indian Ocean Cable Company (WIOCC) board by the Alcatel sub-marine networks -- the sub-contractors. WIOCC is the largest investor in EASSy with 29 per cent shareholding.

The cable constructed by a consortium of telecommunications companies (Bharti Airtel, Botswana Telecom Corporation, British Telecom, Comoros Telecom, Etisalat, France Telecom, Mauritius Telecom, MTN International Group, Neotel, Saudi Telecom Corporation, Sudatel, TTCL, Telma, Vodacom, Telkom South Africa, WIOCC and Zambia Telecom) offers a direct route to Europe, Asia and the Middle East and is the largest cable system in sub Sahara Africa. Zantel is the local investor through its shareholding in WIOCC.

Experts say EASSy would increase competition for internet connectivity in the country and region with the possibility of reducing tariffs. Mr Mahfoudh explained that all was now in place to go LIVE. "All the testing had been done and we are fully operational. The EASSy cable has the capacity to deliver 1.4 terabytes per second, making it the largest submarine cable system serving the continent. He said that the cable which is in nine countries will offer transit connection through backhaul networks to at least 12 landlocked countries providing the greatest area coverage.

[Ford Foundation Commits \\$85 Million to Advance Rural Land Rights and Reduce Climate Change](#)

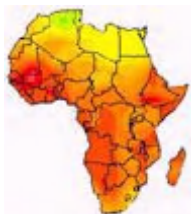


The Ford Foundation has announced a five-year, \$85 million initiative that will make rural and indigenous people a stronger part of the world's response to climate change, saying that engaging these populations is essential to reducing poverty and building long-term climate solutions. Focused on six key regions, the initiative will empower rural communities whose livelihoods depend on natural resources to play a more active role in the stewardship of those resources. The foundation will also work with the global organizations, multilateral funders and governments that are set to invest billions of dollars over the coming years in

climate change programs that will affect these communities.

Foundation officials noted that with some 30 percent of the world's greenhouse gas emissions coming from the rural sector, the work of engaging rural and indigenous people in sustainable solutions has tremendous implications for efforts to reduce climate change. The foundation's grants will seek to ensure that global programs to address climate change respect the needs of the rural poor and harness the potential of these populations to design and participate in solutions. The work represents an alternative to traditional approaches to managing forests, dry lands and other vast tracts of land and resources, which are often based on one of two myths: that such areas are pristine wilderness devoid of people, or that they are wastelands that need to be diverted to industrial uses. With more than 1 billion people in developing countries living in rural areas with fragile ecosystems, Ford intends to highlight the urgent promise of a more innovative approach that focuses on the role of natural assets in generating economic opportunity and empowers rural and indigenous people to continue to act as sustainable stewards of these lands and managers of their own livelihoods. This new effort builds on decades of Ford support for projects focused on community-based natural resource management, such as community forestry, that gives communities whose livelihoods depend on forests a chance to generate income from those forests in creative and sustainable ways. It will also help ensure that broader public investment in and management of natural resources to achieve food security and reduce climate change is implemented in a way that is both sustainable and beneficial to rural and indigenous populations. Working with NGOs, governments, other funders and rural communities themselves, Ford's grants will help to:

- Develop the advocacy skills of rural leaders so they have a stronger voice in how natural resources are managed;



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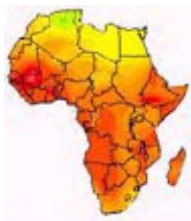
- Demonstrate successful models of community management of resources and ensure that the lessons of this work are informing national and global policy;
- Promote public investment that benefits rural communities and acknowledges their role as stewards of valuable natural assets;
- Ensure that global climate change programs account for and address the needs of indigenous communities and the rural poor;
- Strengthen institutions and networks that advance this approach.

Ford's grant making is focused on low-income populations situated in forest, grassland, marginal agricultural land and other rural regions in six areas where the foundation maintains a regional office: Brazil, Indonesia, China, Eastern Africa, Mexico and Central America, and India. Rural communities in these areas depend on the natural resources around them for their basic livelihoods, yet most have limited rights to access and utilize them, or suffer from poor levels of public investment to augment returns from their use of these resources.

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

Conferences, Events

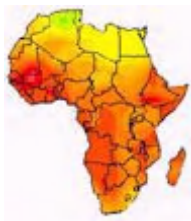
Date	Location	Event
August 2010		
3 - 4 August 2010 * NEW *	Abuja, Nigeria	International Workshop on Integrated Disease Surveillance in West Africa , Contact: slan@nas.org.ng or dbadejo@nas.org.ng
17-18 August 2010 * NEW *	Johannesburg, South Africa	Leadership Development for Women in Aviation Africa
20- 22 August 2010 * NEW *	Nairobi, Kenya	1st African Youth Summit on Climate Change 2010
26-27 August, 2010	Como, Italy	WebMGS 2010 . 1st International Workshop on Pervasive Web Mapping, Geoprocessing and Services
30 August 30 - 3 September 2010	Bilbao, Spain	International Conference on Electronic Government and the Information Systems Perspective (EGOVIS 2010) In conjunction with 21st International Conference on Database and Expert, Systems Applications (DEXA 2010)
September 2010		
6-8 September 2010	Gaborone, Botswana	3rd IASTED African Conference on Water Resource Management (AfricaWRM 2010) Theme: Science and Technology Applications for Health and Sustainable Development
10-12 September 2010	Singapore, Singapore	2010 International Conference on Environmental Science and Applications
13-15 September 2010	Ghent, Belgium	8th International Conference on Geostatistics for Environmental Applications (GeoENV 2010)
14-17 September 2010	Zurich, Switzerland	GIScience 2010
15-17 September 2010 * UPDATED *	Intercontinental Hotel, Nairobi, Kenya	Kenya's International Conference on Biodiversity and Climate Change
15-17 September 2010	Skopje, Macedonia	International Conference on Spatial Data Infrastructures 2010
22 September - 2 October 2010	Rotterdam, The Netherlands	International Conference on "Deltas in Times of Climate Change" Contact: o.van.steenis@programmabureaueklimaat.nl .
27-29 September 2010	Johannesburg, South Africa	Africa FOSSGIS 2010
27 September – 1 October 2010	Ouagadougou, Burkina Faso	9th EUMETSAT User Forum in Africa



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30 September -1 October 2010	Cape Town, South Africa	6th International Conference on E-Government - ICEG 2010
October 2010		
13-15 October 2010	Nairobi, Kenya	East African Project Management Conference - 'EAPMC 2010' , Deadline for abstracts/proposals: 15 September 2010.
13 - 15 October 2010	Nairobi, Kenya	Announcement and Call for Papers: 5th ESRI Eastern Africa user conference , Abstract submission deadline: 15 July 2010.
12-14 October 2010	Cape Town, South Africa	International Conference on Information and Communication Technology for Development (ICT4D 2010)
14-15 October 2010 * NEW *	Niamey, Niger	Capacity building, professional ethics and organization of the surveying profession in West Africa Workshop for West African countries organised by FGF in collaboration with UN-Habitat and GLTN. Co-sponsored by FIG.
17-19 October 2010 * NEW *	Arizona State University, Arizona, USA	Global Land Project Open Science Meeting: Land Systems, Global Change and Sustainability
19-22 October 2010	Singapore	GSDI-12 World Conference , Theme: Realizing Spatially Enabled Societies. In conjunction with the 16th PCGIAP Annual Meeting.
24-27 October 2010	Cape Town, South Africa	22nd CODATA International Conference - Scientific Information for Society: Scientific Data and Sustainable Development . Organised by the International Council for Science: Committee on Data for Science and Technology.
25-29 October 2010	Fez, Morocco	6th World FRIEND Conference (Flow Regimes from International Experimental and Network Data) Theme: Global Change: Facing Risks and Threats to Water Resources. Contact: friend2010@msem.univ-montp2.fr
25-29 October 2010	Addis Ababa, Ethiopia	8th International Conference of the African Association of Remote Sensing of the Environment (AARSE2010) Contact: dozie@ezigbalike.com , info@aarse-africa.org .
November 2010		
1-7 November 2010	Hamburg University	3rd worldwide online climate conference CLIMATE 2010/KLIMA 2010 Contact: info@klima2010.net .
3-5 November 2010	Cape Town, South Africa	4th International Development Informatics Association Conference: IDIA 2010
8-11 November 2010	Sede Boqer Campus, Israel	3rd International Conference on Drylands, Deserts and Desertification Contact: Dorit Korine, desertification@bgu.ac.il .
8-12 November 2010 * NEW *	Hulshort, The Netherlands	Dynamic Interlinkages between Social and Ecosystem Changes: Towards a Europe Africa Partnership
11-12 November 2010 * NEW *	Mombasa, Kenya	FIG Africa Task Force Workshop . Organised by FIG Africa Task Force.
19-21 November 2010	Munyonyo, Kampala Uganda	2010 Pilot International Conference on Global Sustainable Development . Theme: Climate Change, A challenge to Businesses in the 21 st Century. Abstract deadline: 30 May 2010.
23-25 November 2010	Cape Town, South Africa	Map Africa 2010
24 November 2010	Venice, Italy	ICGSE 2010: International Conference on Geological Sciences and Engineering
24-26 November 2010	London, UK,	Invitation: expressions of interest to attend the "Commonwealth Climate Change Communication Conference" (C5) .



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29 November - 3 December 2010	Tunis, Tunisia	5th Session of the International Conference Geotunis 2010 Theme: The use of GIS and remote sensing for sustainable development. Contact: atigeo_num@yahoo.fr .
22-24 November 2010	Cape Town, South Africa	Leadership & Management Studies in Sub-Sahara Africa 2010 Conference
December 2010		
5-9 December 2010 * NEW *	Bielefeld, Germany	Environmental Degradation and Conflict: From Vulnerabilities to Capabilities , Deadline for application: <u>15 August 2010</u> .
13-16 December 2010	Abu Dhabi	Eye on Earth Summit
14-16 December 2010	Benghazi, Libya	International Arab Conference on Information Technology (ACIT 2000) , Deadline for paper submission: <u>30 June 2010</u> .
2011		
8-14 January 2011	Johannesburg, South Africa	23rd Colloquium of African Geology
10-14 January 2011 * NEW *	Hyderabad, India	International Forestry Resources and Institutions panels for the 13th Biennial Conference of the International Association for the Study of the Commons (IASC)
1 January - 31 December 2011	Worldwide	International Year of Forests 2011
18-21 January 2011	Hyderabad, India	Map World Forum 2011
21-25 February 2011	Nairobi, Kenya	26th Session of the UNEP Governing Council/Global Ministerial Environment Forum
26- 28 February 2011	Singapore, Singapore	2010 3rd IEEE International Conference on Signal Acquisition and Processing (ICSAP 2011)
6- 8 April 2011	Stellenbosch, South Africa	4th IUPAP International Conference on Women in Physics
10-15 April 2011	Sydney, Australia	34th International Symposium on Remote Sensing of Environment (ISRSE2011) Contact: Ian Dowman, idowman@cege.ucl.ac.uk .
9-13 May 2011	Sun City, South Africa	5th International Wildland Fire Conference (WildFire 2011) Contact: info@wildfire2011.org .
18-22 May 2011	Marrakech, Morocco	FIG Working Week & XXXIV General Assembly Contact: FIG Office, fig@fig.net .
20 - 22 May 2011 * NEW *	Agadir	Climate Change, Agri-Food, Fisheries, and Ecosystems: Reinventing Research, Innovation, and Policy Agendas for an Environmentally and Socially-Balanced Growth , Deadline for abstract/proposal submission: October 15, 2010. Contact: Dr. Mohamed Behnassi at behnassi@gmail.com .
20- 25 March 2011	Cape Town South Africa	2011 African Conference on Software Engineering and Applied Computing
22- 26 May 2011	California, United States	World Environmental and Water Resources Congress Deadline for abstracts/proposals: <u>7 September 2010</u> .
4 - 8 September 2011 * NEW *	Cape Town, South Africa	The 6th Science Centre World Congress
October 2011	Cairo, Egypt	AfricaGIS2011 Conference
28 November - 9 December 2011	South Africa	17th Conference of the Parties to the UNFCCC and 7th Meeting of the Parties to the Kyoto Protocol Contact: UNFCCC Secretariat, secretariat@unfccc.int .



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8-12 July 2012	San Diego, California USA	ESRI User Conference
8-12 July 2013	San Diego, USA	ESRI International User Conference

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Gordon Ojwang', Editor, [SDI-Africa AT gsdi.org](mailto:SDI-Africa_AT_gsdi.org) or sdiafrica@rcmrd.org
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