

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@rcmrtd.org or gojwang@rcmrtd.org



Input to this Issue

Thank you to Kate Lance, NASA/SERVIR-Africa (USA), Hussein Farah, RCMRD (Kenya); Jörg Balsiger, Sprout Award Committee (Switzerland) and Gyde Lund, Forest Information Services (USA) for their contributions to this issue of the newsletter.

SDI News, Links, Papers, Presentations

[Global warming will increase likelihood of civil war in Africa by 55 percent](#)

There have been many warnings by policymakers that rising temperatures in Africa could lead to civil conflict, however a new study in *Proceedings of the National Academy of Sciences* is the first to uncover empirical evidence for these warnings and quantify them. The results that higher temperatures increased the likelihood of civil war in sub-Saharan Africa by over 50 percent took aback even the researchers. "We were definitely surprised that the linkages between temperature and recent conflict were so strong," Edward Miguel, professor of economics at the University of California (UC), Berkeley and faculty director of UC Berkeley's Center for Evaluation for Global Action, told his university. "But the result makes sense. The large majority of the poor in most African countries depend on agriculture for their livelihoods, and their crops are quite sensitive to small changes in temperature. So when temperatures rise, the livelihoods of many in Africa suffer greatly, and the disadvantaged become more likely to take up arms."

The researchers compared data on civil wars in sub-Saharan Africa with rainfall and temperature records. Between 1980 and 2002, civil conflict was far more likely in warmer years. The researchers found that an



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increase in temperature by a single degree in Celsius raised the likelihood of civil conflict by almost 50 percent. With this data in hand the researchers turned to the future. Using predictions of future temperature and precipitation in the region from 20 different global climate models, the researchers found that the likelihood of civil wars in sub-Saharan Africa in 2030 jumped by 55 percent. If these conflicts prove as destructive as recent ones, the death toll could be near 400,000 people.

[Tanzania learns land management insights from Jamaican national land agency](#)

International Land Systems (ILS) recently led a Study Tour of senior Government officials of the United Republic of Tanzania to the Jamaican National Land Agency (NLA) to study their modern integrated Land Registry and Cadastre system. The Study Tour is part of an ILS World Bank contract to conduct a land title registry needs assessment as part of the World Bank's Private Sector Competitiveness Project. Heading the eight member Tanzania delegation was Mr. Patrick Rutabanzibwa, Permanent Secretary of Tanzania. During their week-long study program, the group became acquainted with the ILS Land Registry and Cadastre systems currently in place at the NLA to understand how they interface with other government departments, including Land Titles, Survey & Mapping, Land Valuation and Estate Management. The delegation was able to view a "live" production environment that actively supports high volumes of daily land transactions. Through presentations and discussions, the Jamaican NLA shared valuable lessons with the Tanzanian group. Common linkages included intra-Government departmental coordination, staff training, data issues, financial management, as well as software and hardware requirements and procurement. The delegation was also educated on the NLA's history, its responsibility as an executive agency, and duties as a corporate planning office. Internet: www.landsystems.com.

[Tension as Egypt rejects new deal for Nile water](#)



In arid Egypt, officials have long angered fellow Nile Basin countries by clinging to colonial-era water treaties giving it rights to the lion's share of water flowing down the world's longest river. But upstream nations desperate for development are hoping to break with the past, threatening to shut regional heavyweight Egypt out of a new pact and potentially deepening an already bitter struggle for water resources across this parched region. The feud could also upset the

balance between poor upstream nations and Egypt, where climate change threatens a fragile farm sector and population growth may outstrip water resources as early as 2017.

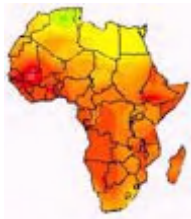
The latest chapter in the long-running feud over waters from the Nile, came when upstream countries declared after a water meeting in April in Sharm El-Sheikh that they would launch separate talks since Egypt and Sudan refused to revise water pacts dating to 1929. The deal gives Egypt 55.5 billion cubic metres a year, the biggest share of a flow of some 84 billion cubic metres. It also gives Cairo the power to veto dams and other water projects in upstream countries that include six of the world's poorest nations. Upstream states have invited Egypt and Sudan to take part in the new deal, whose legal standing would be uncertain, but on their terms.

[Breakthrough in Lake Victoria digital mapping](#)



Maritime experts from the Lake Victoria Basin Commission (LVBC) have located a survey point after a two-year search, and can now complete the development of a digital navigation map of Lake Victoria showing the ports of Kisumu, Mwanza and Port Bell. The experts from the Commission spent two years searching for the point, which was eventually found with the help of MMT Bathymetric, a survey company of Sweden, whose officials visited the British Admiralties Archives in Taunton, England, where information led to the eventual discovery.

The benchmark point, installed by UK-based firm Admiral White House in 1899, is situated at an altitude of 3,744.23 feet above mean low water level in Mombasa and co-ordinates were established based on information obtained from the archives. "We could not finalise the survey charts because of the missing survey point benchmark at Kisumu, which was decided by Partner States to be the reference," said Gerson Fumbuka, a maritime and security officer at LVBC. The results of the survey will be used to evaluate the current conditions (water depth) and will further provide data to support draft route selection for maritime lanes in Lake Victoria. The identification of the maritime point will be a starting point for a new level of accuracy in the charting of Lake Victoria. The digital map is expected to strengthen Kenya's case as it prepares to petition the secretariat of the Ramsar Convention to designate parts of the



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lake basin as endangered areas that require special conservation efforts guided by principles of the international pact. The position of the point in Kisumu 2009 (WGS84, GRS80) is as follows: Latitude - 0° 6.236' S, Longitude - 34° 44.794' E and Ellipsoidal Height- 1122.22. [The East African]

Satellite link makes a comeback



Local internet service providers still connected through the satellite are having a field day following the disruption of the fibre optic cable. Satellite connection is now the main link of ISP as attempts continue being made to repair the fibre wires. Soon after going live of the cables, the desire to switch off the satellite was insatiable.

According to Mr Les Baillie, chief investor relations at mobile telephone service provider, Safaricom, the company has had to revert to satellite to cater for its clients. "Initially, it appeared as a costly investment to retain the connections but now we are seeing the sense of it. While the fibre is highly reliable, at the back of our minds we knew there would be risks," Mr Baillie told the *Nation*. Expectations among internet users have been high in as far as cutting costs and increasing speeds are concerned. However the industry has seen cases of outages and cable vandalism increase. During the whole of this week, Kenya reverted to snail's pace internet speeds blamed on a fault on the SEA-ME-WE 4 cable along the Mediterranean Sea. The two undersea fibre optic cables that connect country's coast of Mombasa to the rest of the world were rendered useless for the entire period of repair. The two links, Seacom and the East Africa Marine System (Teams), utilise the SEA-ME-WE 4 to connect to London. Despite being credited as a slow connection, ISPs did not have a choice but to go the satellite way. "Satellite will always be there to offer back-up and fibre will not reach the remotest parts of the country". Players say that the loss attributed to the disruption is colossal, as they had to make contingency plans for service delivery. Others have lost customers to rivals who were quick to revert to satellite. [Source: Daily Nation, 30 April, 2010]

Digital map of South Africa ready for World Cup soccer

Tele Atlas has introduced a World Cup Soccer-ready digital map of South Africa. The special version of Tele Atlas' MultiNet map database includes all roads in South Africa, Lesotho and Swaziland as well as accurate details of the nine host cities in South Africa. The new MultiNet release also contains more than 50 3D landmarks and landmark icons of important buildings and stadiums across the host cities.

The World Cup Soccer-ready digital map will allow fans to find everything they want, such as restaurants, hotels and bars and fastest routes around regulated traffic zones near event locations. According to Danny Grobben, general manager of Tele Atlas South Africa, with Tele Atlas content as the foundation, mobile and in car navigation products will help people to avoid temporary road closures, find the best walking route to stadiums and see just where they are using Tele Atlas 3D landmarks or detailed Tele Atlas 2D city maps.

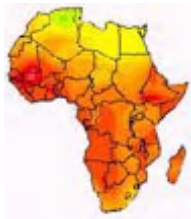
Tele Atlas offers complete coverage of the street network in South Africa, Lesotho and Swaziland. The special World Cup version adds 12,000 kilometers of new roads with speed restriction, signpost and lane information. The product release also contains Tele Atlas Advanced City Models of Johannesburg, Cape Town Pretoria and other metropolitan areas, offering three-dimensional representations of cities that raise the clarity of screen images within in-car and portable navigation systems and mobile devices.

South Africa launches weather service radar network



Minister of Water and Environmental Affairs, Buyelwa Sonjica, has launched a state-of-the-art weather radar network that will see the prediction of and warnings about severe weather become more accurate. The launch forms part of the government grant to the South African Weather Service of R240 million for infrastructure investment to upgrade and replace its over 30-year-old radar systems to bring about a substantially improved weather observation network that meets contemporary needs. The new weather radars will play a vital role in enhancing adaptation tools and products such as the Severe Weather

Forecast project and the Flash Flood Guidance System that minimise loss of life and damage to property. The radar network consists of 12 new doppler weather radars. Sonjica said: "As government and the only shareholder, we must ensure that the Weather Service remains at the cutting edge of meteorological technological development to improve accuracy and to also remain relevant in order to benefit us all." Currently, the South African weather radar network consists of 12 radars located across the country. The



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network has been used extensively in the past in various weather predictions, storm identification and aviation applications. Although useful, the existing radars lack Doppler capabilities. With the introduction of Doppler radars, the movement of storms can also be detected, providing better now-casting during severe storms. Sonjica said the new radar system will ensure complete coverage of neighbouring countries such as Lesotho and Swaziland. The system can also predict the path of a storm and issue warnings to the people in its path. It will also detect wind movement in clear air and it can also detect the movement of dust in the air. [Source: BuaNews]

[SA ranks among the best in space](#)

South Africa must not be shy about competing with the best countries in the world, Science and Technology Minister Naledi Pandor said after seeing the first images from the country's low Earth orbit satellite, Sumbandila, in February. "I'm excited that our nation is in space. We intend to use our minds and our resources to take a leadership position in space. We are on track, we can be among the best," Pandor said at the satellite applications centre in Brits.

Sumbandila, meaning "lead the way" in Tshivenda, cost more than R20 million to build and R12m to launch. It was developed by the private enterprise SunSpace, consisting of University of Stellenbosch students and academics. Pandor said the project was important for the country to advance. "We must develop our own capabilities," she said, adding that she was pleased the satellite was delivering what it was built for.

SumbandilaSAT weighs 81kg and has a 6.25-metre ground sampling distance.

The multispectral imager moves at a speed of 7km a second. Russia was contracted for the launch five months ago. Pandor said the project would strengthen the country's existing technological capabilities and space resources, expand capacity development and training in satellite engineering and provide Earth-observation satellite data.

[Launch of Africa Adaptation Programme in Namibia](#)

Namibia has become one of the first African countries to launch the climate change adaptation programme. Supported by the United Nations Development Programme – UNDP, the Namibia Africa Adaptation Project (NAM-AAP) will aim to create systems to manage climate change risks and opportunities in the long-term. It will focus on improved planning to help Namibia deal with climate change aspects such as, floods and drought risks. Funded by the Government of Japan, Namibia is one of 20 African countries that has been selected to participate in the overall Africa Adaptation Programme, entitled "Supporting Integrated and Comprehensive Approaches to Climate Change Adaptation in Africa", which is worth US\$92.1 million.

Officiating at the launch of the US\$3 million project, Namibian Prime Minister Mr. Nahas Angula thanked the Japanese government for choosing his country as one of the recipients stating, "We believe that the Namibia Africa Adaptation Project will contribute substantially to the attainment of our long-term Vision 2030, the Millennium Development Goals, as well as the goals that we have set for ourselves in the third National Development Plan." The Prime Minister emphasized the need for Namibia to look at all energy options so that the best alternative energy sources could be further developed.

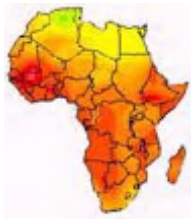
Japan's support for climate change adaptation in Namibia and other developing countries is part of a US\$10 billion 'Cool Earth Partnership' financial mechanism aimed at reducing greenhouse gas emissions while achieving economic growth. [Source: [United Nations Development Programme \(UNDP\)](#)]

[Agricultural insurance launched in Botswana](#)

Agriculture insurance has finally been launched for the first time in Botswana with the facilitation of the Agricultural Hub, as the sector tries to move towards full commercialisation. Agrinsure Botswana, a joint venture effort between South Africa's Farmers Technical Insurance Services Company (FTISC) and Alexandra Forbes Botswana, was recently officially unveiled to stakeholders in the industry.

According to Agriculture Hub Coordinator, Neil Fitt, the establishment of agriculture insurance in Botswana is a major milestone in the sector as the idea for such a product has been in the pipeline for many years and it will now strengthen the country's efforts to attain food sustainability. "In the past we have only had schemes that were put in place by government and in as much as they were very helpful to the farmers, since they had limitations as national programmes. With the introduction of Agrinsure, we will now have products that are farm and individual specific. This will also go a long way in assisting farmers that were in need of such products as we know that banks here are not that excited about the farming business," said Fitt.

The company will be the first to offer agricultural insurance products in Botswana covering both livestock and crops. The Agriculture hub Coordinator says that the Agrinsure project is purely a commercial venture with



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no government involvement except only to sanctify the venture. On crops, the cover provided will be based on a guaranteed yield which is determined by the production history (potential yield) and calculated at an agreed value per tonne. Perils that may be covered are fire, lightning, frost, excessive rain, drought including excessive heat waves, uncontrollable crop diseases and pests and transit within a 100km radius. The basis rate for this insurance is five percent.

[NASA scientists work with RCMRD to transition flood modeling capacity](#)



SERVIR-Africa team members welcomed a visit by NASA's Goddard Space Flight Center scientists, Fritz Policelli and Dr. Habib Shahid on 14-16 April 2010. The visit by the scientists was to review the progress made in the full transition of the NASA-OU CREST model to RCMRD. They reviewed the work that has been undertaken and identified remaining issues on model compilation at the RCMRD. They also held talks with the Kenya Meteorological Department (KMD) and placed a formal request for precipitation data to be incorporated in the CREST model being transitioned. The NASA-OU CREST model is a fully distributed scalable hydrologic model, jointly developed by NASA and Oklahoma University scientists for flood forecasting and monitoring in the Lake Victoria basin.

During the same period (12-16 April 2010), Zac Flamig, a CREST model expert from the [Remote Sensing and Hydrology Group \(RSHG\)](#) of the Oklahoma University conducted training sessions to the RCMRD technical staff as well as a few invited external experts on the NASA-OU CREST model. The NASA-OU CREST model is a fully distributed scalable hydrologic model, jointly developed by NASA and Oklahoma University scientists for flood forecasting and monitoring in the Lake Victoria basin. He also explored extending the model for new watersheds and incorporating precipitation forecasts. [Source: Servir Community Blog]

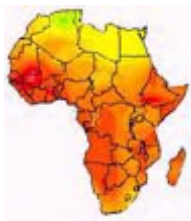
[Water harvest and storage - location optimization model using GIS and remote sensing](#)

This study describes a comprehensive and convenient method to optimize the locations to implement integrated water management strategies efficiently and effectively. To illustrate this routine methodology, the authors have developed a spatially explicit spatial analysis model: Geographic Water Management Potential (GWAMP). The focus is on the aspect of using GIS, to find adaptation and mitigation strategic solutions for water management, by applying GWAMP at global scale. Since these solutions are important towards ensuring and improving agricultural land productivity at climate initiated water related drastic events. The input data was retrieved from global data repositories and rescaled to 1km spatial resolution, to obtain a set of manageable input data having adequate level of information. Potential runoff is calculated as an intermediate input using the Soil Conservation Service Curve Number (SCS-CN) equation. Multi Criteria Evaluation techniques are used in decision making, in order to analyze the results reflected by specific suitability levels and relative importance of input parameters. Accordingly, the model specifies potential water harvesting- and storage sites for on-farm water storage, regional dams, and soil moisture conservation. The model has been applied in two test case-study locations; Sao-Francisco catchment and Nile catchment, having two different climatic conditions and validated using existing data on hydrologic networks, reservoir capacities and runoff. On average, GWAMP 's predictions on rain water storage technologies agreed (83%) with the existing data of regional dams and farm tanks.

[Rapid Urbanization and Mega Cities: The need for spatial information management](#)

Today there is an ever-increasing demand for the collection, integration, management and sharing of reliable spatial information, and the relevant education, experience sharing and development of best practices. This growing demand is driven by some of the most important changes in society which in turn are magnified by rapid urbanisation and the conditions of the world's megacities. It is the purpose of FIG and its Commission 3 (Spatial Information Management) to assist the profession in all aspects of spatial data management in respond to these challenges and in support of society everywhere.

During the 2007–2010 term of office FIG Commission 3 has addressed the phenomenon of rapid urbanization and its impacts. Its particular focus has been on identifying spatial tools and general principles, norms and standards for good governance using reliable and accessible spatial information and providing guidance to interested countries to successfully address the problem of rapid urbanization. A central theme has been the formal access to land, property and housing for all. Further research will focus on climate



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change and disaster prevention and response, and other security issues that emerge due to rapid urbanization and accelerated development. FIG Commission 3 has cooperated closely with agencies of the United Nations (UN-ECE, WPLA, UN-HABITAT and GLTN), the World Bank, ISPRS and other sister associations. FIG publication 48 is a further contribution of FIG and FIG Commission 3 in this field. This paper briefly presents the recommendations presented in this publication, which should help governments, decision makers and professionals to deal with the major challenges of rapid urbanisation.

[Sourcebook on remote sensing and biodiversity indicators](#)

The methods cost and benefits of traditional biodiversity indicators (for example, species counts or total hectares in protected areas) are relatively familiar to environmental decision makers. In contrast, the complexity associated with the various integral components of remote sensing (radiative transfer, satellite technology, image processing, and field ecology among others) can be intimidating to non-specialists and may preclude the adoption of truly useful applications. In other instances, many of those who have crossed the technological divide and seen map products and statistics resulting from remote sensing analysis may be overconfident about its potential to produce accurate environmental classifications and detect characteristics of ecosystem change.

The book address these and other questions while presenting the overall role that remote sensing can play for developing and monitoring biodiversity indicators relevant to various strategic components of the Convention on Biological Diversity (CBD). Relationships between measures made at the global level and at scales typical in national and local monitoring are presented, as well as examples of remotely sensed indicators for monitoring at the national and sub-national levels. Practical tools, datasets and other resources readily accessible to remote sensing users are also highlighted. The indicators covered in this book are based on the list identified for immediate testing and for further development by the CBD COP8 (Decision VIII/15). Concentration is made on indicators that are relevant to both international and national decision makers and for which remote sensing is a highly relevant tool. Finding show that remote sensing data can make a strong contribution to six of the areas of interest identified by the CBD: (1) trends in extent of selected biomes, ecosystems and habitats; (2) coverage of protected areas; (3) threats to biodiversity; (4) connectivity or fragmentation of ecosystems; (5) trends in populations of selected species; and (6) potential human development indicators. Case studies that provide a rationale and resources for commonly used indicators within the context of real projects are provided throughout the text.

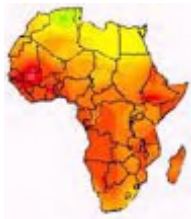
[A practical guide to geostatistical mapping](#)

This guide evolved from the materials that were gathered over the years, mainly as lecture notes used for 5 day training course in GEOSTAT. The GEOSTAT training course was originally designed as a three week block module with a balanced combination of theoretical lessons, hands on software training and self-study exercises. This obviously cannot work for PhD students and university assistants that have limited budgets, and increasingly limited time. What was offered instead is a concentrated soup - three weeks programme in a 5-day block, with one month to prepare. Because the participants of GEOSTAT typically come from diverse backgrounds, many demos have been put in this book.

[Land use - land cover mapping and change detection in Kafur, Katsina, Nigeria \(1995-2008\) using remote sensing and GIS](#)

The study assessed the changes in land use/land cover in Kafur local government area of Katsina state, Nigeria over 13 year period. The study made use of Land use/land cover map of the study area for 1995 and Google earth imagery of 2008. The image and map was digitized into GIS environment using Arc view 3.2 GIS software for analysis. A paired t-test analysis was also used to see if there was significant change in the land use/land cover between 1995 and 2008. Results show that open space covered 13.56 square kilometers of the land area and constituted 34.00% in 1995 which constituted the most extensive type of land use/land cover in the study area. The increasing population and economic activities were noted to be putting pressure on the available land resources. The paper highlights the land use/land cover types, the change over the years and the causes of the change. The importance of remote sensing and GIS techniques in mapping and change detection is also highlighted.

The study has shown the major land use/land cover types in the study area as built-up areas, agricultural land, water body, transport land use and open spaces and that there was no significant change in the various land uses and land covers in the study area over the period of 13 years studied. It therefore follows that land management in the study area was actually good. The study also demonstrates the recent advancements in



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remote sensing and GIS technologies provide powerful tool for mapping and detecting changes in land use/land cover.

[The Second Science with Africa conference](#), 23-25 June 2010, United Nations Conference Center, Addis Ababa, Ethiopia.



The second Science with Africa conference, entitled Science, Innovation and Entrepreneurship, to be held from 23-25 June 2010, will explore policies, measures and mechanisms for promoting innovation and entrepreneurship to meet development challenges in Africa. This is based on estimates that suggest Africa's investment in R&D, acquisition of technology and exploitation of existing, new and emerging knowledge is lower than that of other developing regions.

[Open Call - Global Land Project \(GLP\) SSC](#)

GLP activities are overseen by an international Scientific Steering Committee (SSC). The SSC represents a broad spectrum of disciplines and nationalities, and includes both mid-level and senior scientists. The continuing success of GLP relies on the input of these people. SSC tasks include such things as:

- Overall responsibility for the GLP project.
- Developing and promoting GLP's scientific agenda.
- Hosting GLP workshops, acting as a liaison to GLP workshop organizers.
- Editing special newsletter or journal issues.
- Representing GLP at meetings, coordinating national GLP activities.
- Communicating with the GLP IPO and the Nodal Offices.
- Being available for at least one yearly 3 day SSC meeting (funded through the project).

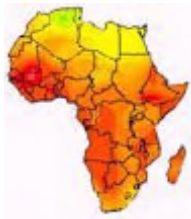
Scientists who serve on the SSC normally do so for a period of 3 years, with the potential for renewal for one additional term. Nominations to the SSC can be made by individuals or the SSC itself, and are considered by the SSC at their annual meeting. Selected candidates are then recommended to IGBP and IHDP for final approval. In seeking nominations, we are not only looking for scientific excellence and a high level of commitment to GLP goals, but are also aiming to achieve a disciplinary, nationality, gender and age balance. To nominate a SSC candidate, please send the filled-in GLP SSC Application Form including a short CV (max. 5 pages) by email to the GLP IPO (Tobias Langanke or Lars Jorgensen). Nominations for new SSC members starting in January 2011 expired on 1 April 2010. However, applications received after 1 April 2010 will be considered for SSC replacements starting in January 2012. For application form, please see: [Application Form](#).

[US-Africa Workshop on Expanding the AfricaArray Network to Support Multidisciplinary Science in Africa](#), 2-4 June 2010, Howard University, Washington D.C. USA

A workshop on expanding the AfricaArray seismic network to support multidisciplinary science in Africa will be held at Howard University in Washington D.C. The purpose of the workshop is to bring together U.S. scientists and program managers engaged in geoscience research in Africa and their African collaborators to examine and codify the scientific rationale for expanding the AfricaArray seismic network into a multidisciplinary science network. The workshop will assemble participants from a range of science fields that are interested in exploring the benefits of a single instrumentation initiative addressing the science needs of several geoscience disciplines, including, but not limited to, atmospheric science (including climate), geodesy, geography, hydrology, seismology, and space weather. Participation in this workshop is open to anyone interested in the objectives of this workshop. There is no registration fee. Registration for the workshop closes 3 May 2010.

[2nd Preparatory Meeting of the Proposed United Nations Committee on Global Geographic Information Management](#), 10-11 May 2010, UNHQ, New York, NY, USA

UNSD, in collaboration with the UN Cartographic Section, is organizing the Second Preparatory Meeting of the Proposed United Nations Committee on Global Geographic Information Management. The purpose of the Meeting is to discuss and initiate the preparation of a report, for the approval of the Economic and Social Council (ECOSOC), on global coordination of geographic information management, including the consideration of a possible creation of a United Nations global forum for the exchange of information among countries and other interested parties, and particularly for sharing best practices in legal and policy instruments, institutional management models, technical solutions and standards, interoperability of systems



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and data, and sharing mechanisms that guarantee that geographic information and services are easily and timely accessible. The Meeting, bringing together official representatives from member countries as well as representatives from relevant professional organizations, will also offer the possibility to the participants to discuss the terms of reference and the modalities of work for the global forum and the Committee of Experts.

Practical SDI implementation materials from within and outside of Africa

UK election links with property information

As the UK's 2010 General Election campaigns gather pace, Council-held Electoral Registers are benefiting from their linkage with the single address register created by local government, the National Land and Property Gazetteer (NLPG). All electors live somewhere but historically, this information has been maintained in different ways. A project has ensured that as many people as possible who can vote have the opportunity to do so, together with improving the reliability and accountability of electoral information.

A 2008 Ministry of Justice Directive (MOJ) requires all Local Authorities to store their electoral data in a consistent way with prescribed formatting for names, dates of birth and addresses. Each address in a register is matched to a Unique Property Reference Number (UPRN) from the NLPG. The whole process was designed to improve the quality and integrity of electoral registers, enable effective checking of political party donations and to help in detecting certain types of electoral fraud. It also revealed that many properties were entirely missing from Electoral Registers. The process of matching the two datasets together has also improved the quality and reliability of the NLPG, and has facilitated the wider use of the data across Councils. [Source: GIM International]

[Image reveals secrets of Chile earthquake](#)

The first detailed and complete satellite image of the dramatic changes to the Earth's surface caused by the powerful earthquake that hit Chile in February has been released. The ground deformations revealed by the satellite data will have major implications for the understanding of earthquakes everywhere, scientists say. The image, which covers the full 600 kilometres of the earthquake, was issued by Japan's National Research Institute for Earth Sciences and Disaster Prevention (NIED) last week (6 April) and consists of pictures captured by the Japanese Advanced Land Observing Satellite (ALOS) or 'DAICHI'.

It compares the shape of the ground before and after the February earthquake from pictures taken on 10 April 2008 and on 1 March 2010 - two days after the earthquake, which measured 8.8 on the Richter scale. The image reveals that the displacement across the 600 kilometre fault line where the earthquake occurred was not uniform, which explains why the impact was greater in some areas than in others and why the tsunami triggered by the earthquake had varying heights, forces and directions.

The image captured by a sensor on ALOS that penetrates vegetation and takes clear pictures during the day and night in any weather conditions, will become the "reference figure" for the earthquake, added Sergio Barrientos, scientific director of seismological services at the University of Chile. Scientists at the University of Chile's geophysics department are using about 100 permanent and temporary Global Positioning System (GPS) stations to 'ground-truth' the image (calibrate data sensed remotely) and develop models. "Since we cannot access the Nazca and South America [tectonic] plates that cause earthquakes in Chile, we need models to measure deformations in the Earth's crust," said Barrientos. [Full satellite analysis image of earthquake.](#)

[Renewable Energy Atlas shows Vermont's energy options](#)

The Renewable Energy Atlas of Vermont, built on ESRI's ArcGIS technology, was launched on Earth Day, April 22, 2010. Web site visitors can identify, visualize, and analyze data about existing and promising renewable energy projects for Vermont's towns and counties. Visitors to the Renewable Energy Atlas of Vermont Web site can select from biomass, efficiency, geothermal, hydroelectric, solar, and wind renewable energy data layers and use geographic information system (GIS) tools to view existing and proposed projects by area. All renewable energy data layers were created and analyzed using ESRI's ArcGIS Desktop software and published with ArcGIS Server.

The Renewable Energy Atlas of Vermont will assist town energy committees, funders, educators, planners, policy makers, and businesses in making informed decisions about renewable energies in their communities, decisions that ultimately lead to successful projects, greater energy security, a cleaner and healthier environment, and better quality of life across the state.



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The Vermont Sustainable Jobs Fund, Vermont Center for Geographic Information, Fountains Spatial, and Overit Media collaborated to develop the atlas in hopes of moving the state's renewable energy projects from concept to reality. ESRI provided professional service support. Internet: www.esri.com/environment.

GIS Tools, Software, Data

[ESRI ArcLogistics](#)

ESRI's [ArcLogistics](#), the geographic information system (GIS)-based routing and scheduling software known for helping organizations save as much as 30 percent in vehicle-related costs, is now available as a Software plus Services solution. ArcLogistics helps organizations optimize delivery and service routes based on their unique business operations including vehicle capacities, specialties, truck restrictions, and customer time windows. The new release continues to build on the field-proven results of the ArcLogistics desktop product, developed in the late 1990s, whose users consistently reported operational cost savings of 15 to 30 percent. The availability of ArcLogistics online provides a lower cost of entry for small fleets and gives potential customers the ability to try the service before subscribing. Like earlier versions, this release requires no GIS knowledge; its workflow-driven interface provides a step-by-step process for entering and scheduling locations, vehicle, driver/crew, and order information.

Anyone who operates a fleet of vehicles and is interested in ArcLogistics can download the software and try it free for 30 days. To get the trial or more information, visit www.esri.com/arclogistics.

[Free Landsat data via the Internet: Africa's challenge](#)

Since January 2008, the US Department of Interior/US Geological Survey has been providing terrain-corrected Landsat data over the Internet for free. This letter reports the size and proportion of the US Landsat archive that is over Africa by each Landsat sensor, discusses the implications of missing data and highlights the current bandwidth constraints on users accessing free Landsat data over the Internet from Africa. The spatiotemporal distribution of African ETM+ data and the fact that there is a mean of 6.9 acquisitions per path/row per year with cloud cover $\leq 40\%$ imply that the free ETM+ data will largely meet African application needs. However, prior to 1999, in the Landsat MSS and TM era, there are far more data gaps over Africa. Indeed, the majority of African path/rows have no acquisition held in the US Landsat archive for the years 1974-1983 and 1989-1998. This high level of missing historical data precludes complete 'wall-to-wall' continental mapping on an annual basis, and many annual land surface monitoring and change detection applications, using the free Landsat data.

This letter highlights Internet access as one of the several constraints on the uptake of satellite sensor data in Africa. Even when there is a solution to African Internet constraints, it is unknown how much free Landsat data will be used in Africa, although a recent remote sensing user survey of 377 respondents from over 30 African countries found that the majority of respondents believed that they had an adequate amount of remote-sensing expertise and capability but that they needed a greater number of accessible geospatial data sets (Global Marketing Insights, Inc. 2009). However, until Internet constraints are ameliorated only African users and external agencies with sufficient Internet connectivity to the US Landsat archive will benefit from the free Landsat data policy.

[MapWindow GIS Open Source Software](#)

The MapWindow application is a free, extensible, geographic information system (GIS) that can be used:

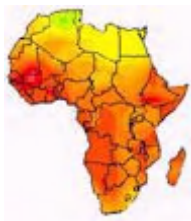
- As an alternative desktop GIS
- To distribute data to others
- To develop and distribute custom spatial data analyses

MapWinGIS ActiveX Control

At the core of the MapWindow application is the MapWinGIS ActiveX control. Using this control, you can program custom mapping functionality directly into your own software.

- Open source component (free distribution)
- Complete GIS API for shapefile and grid data
- Many built in GIS functions

[Quantum GIS \(QGIS\) – Version 1.4](#)



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Quantum GIS (QGIS) is a user friendly Geographic Information System (GIS). QGIS supports vector, raster, and database formats. It supports many common spatial data formats. QGIS supports plugins to do things like display tracks from GPS or served online spatial data as OGC-compliant WMS or WFS.

[UMN MapServer – Version 5.6.0](#)

The heart of UMN MapServer is a CGI-based application for delivering dynamic GIS and image processing content via the World-Wide Web (WWW). The package also contains a number of stand alone applications for building maps, scalebars and legends offline. Access to the development environment of MapServer is possible with a number of different programming languages.

[SimActive](#)

Integrated in its Correlator3DT software, the module allows the fully automated creation of mosaics from individual orthophotos. Designed for speed and ease of use, Correlator3DT consists of fully automated software tools for the production of digital surface models (DSM) and digital terrain models (DTM), the creation of orthophotos and mosaics, and the detection of 3D changes. Correlator3DT is significantly simpler and faster than currently available tools. Highly trained personnel are no longer mandatory.

[Elshayal Smart GIS Map Editor 4.27](#)

- GIS Free Software
- Download, mosaic Google Earth tiles map, Convert Autocad DXF to shape file , Trace, save GPS, Geo Reference, Rectify Raster Images, Edit, make shape files, Attribute Data Base Analysis, Spatial Location Analysis, Shortest Path, Convert Coordinates Systems, Convert Shape types, Edit, make Tables, UnDo, ReDo, Thematic Color Field, Run VB Script, Divide polygon with buffer, Rotate - Scale

<http://www.smartwebonline.com/pages/Downloads/ElshayalSmart.zip>

[A Practical Guide to Geostatistical Mapping](#)

It's jam-packed with 291 pages on mapping and analyzing spatial data using R+gstat/geoR, SAGA GIS and Google Earth combo of software packages. This is an Open Access Publication which means that a digital copy of this book is freely available under the Creative Commons Attribution-Noncommercial-No Derivative Works 3.0.

Geospatial Research, Applications, Reference Material

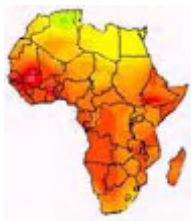
[Geospatial application help temper Mother Nature's fury](#)



Last year, the southern African nation of Namibia experienced its worst flooding in decades as the Zambesi and other rain-swollen rivers rose more than 25 feet and inundated several regions of the continent. The flooding caused large-scale destruction to homes, schools, health facilities, mahangu and maize fields, and infrastructure. A result of heavy rains in neighboring Angola and parts of Zambia's Western Province, the flood also displaced more than 300,000 people and contributed to cholera and other disease outbreaks. The disaster in March 2009 followed a similar season of flooding in 2008.

This year, Namibian officials hope to get a head start against catastrophic weather situations. Their approach is to create a geospatial application that taps satellite imagery and river-height sensors and get an early read on when and where the flood waters are coming helping them decide where to deploy the right resources. An international team of experts, including representatives from NASA and the National Oceanic and Atmospheric Administration, are contributing their expertise in satellite mapping and sensor technology. "Basically, we are trying to build predictive models for floods," said Dan Mandl, a senior computer engineer at NASA's Goddard Space Flight Center.

Predicting floods might be a little easier than predicting earthquakes, but Namibia's project exemplifies an emerging, though largely untested, set of geospatial applications that are still in their technological infancy but promise to have many life-saving uses across the world. Indeed, across all sectors of society, geospatial experts are rapidly establishing a sensory connection between information systems and the real world. And that has big implications for government. With little fanfare, geospatial information derived from sensors is already helping decision-makers better understand the context of problems that they face on a daily basis.

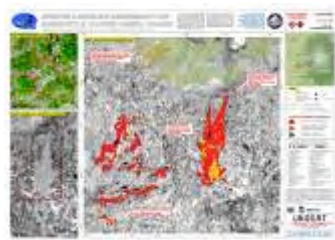


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Nearly anything in the physical world that needs to be managed has a location in space and time and can be measured. And it needs to be measured if it is to be managed well.

[UNOSAT produces geospatial information after Uganda disaster](#)



[UNOSAT](#) rapid mapping was activated in March over Uganda in the aftermath of deadly landslides provoked by severe flooding in the region of Bududa. According to [OCHA](#) as of 16 March 2010, 94 bodies have been retrieved while over 300 people are missing following the landslides. The disaster occurred on the evening of 1 March 2010, burying the three villages of Nametsi, Kubehwo and Namangasa in the Bukalasi sub-county. For this event, UNOSAT requested the activation of the International Charter Space and Major Disasters. This arrangement between several national space agencies and ESA provides free satellite data for the realization of geospatial products to be used in

humanitarian and emergency response operations following natural and technological disasters. UNOSAT has benefited from this mechanism since 2003 and created hundreds of maps based on Charter data for the benefit of a large number of humanitarian and development agencies of the UN involved in responding to large disasters. In recognition of the work of UNOSAT, the Board of the International Space Charter appointed UNOSAT "Charter User Intermediary" in 2009. The Uganda maps are accessible since 11 March.

[Mapping healthcare for African truckers](#)



Inefficiencies along Africa's all-important road transport routes, with downtime at border crossings often accounting for more than 50% of journey duration, are one of the major root causes of health risks such as the spread of HIV/Aids and tuberculosis. A major private sector initiative, however, has been launched recently to help alleviate the negative impact of these health hazards on workers in the transport sector and the communities with whom they come into contact; while there remains much to be done by governments throughout the continent. New maps pinpointing the exact location of "wellness centres" in sub-Saharan Africa are improving truck drivers' access to treatment and care for HIV and other sexually transmitted

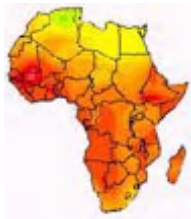
infections (STIs). Oil giant Shell, with risk specialist Maplecroft and the North Star Alliance, which builds roadside clinics at truck stops, have developed and printed 20,000 maps for distribution to truck drivers in Kenya, South Africa, Cote d'Ivoire, Burkina Faso, Togo, Tanzania, Uganda, Botswana, Guinea, Mali and Namibia. The maps show the locations of more than 160 clinics.

In East and Central Africa, the maps are being distributed to truckers at "SafeTStops" where wellness centres provide a range of services, including screening of STIs, HIV testing and counseling and tuberculosis screening, for truck drivers and communities with whom they interact. "The wellness centres have been put up in areas where these high-risk groups converge to provide information about HIV and other STIs, prevention methods like condoms, diagnosis of STIs and testing and counseling," says Dorothy Muroki, project director for the Regional Outreach Addressing AIDS through Development Strategies II, a project of the NGO, Family Health International (FHI). "For high-risk groups, information is critical." There are eight SafeTStops serving an estimated 230,000 people annually in Djibouti, Tanzania, Rwanda and Uganda.

[East African Corridors: transport projects database and map](#)

Senior officials from the trade and transport sectors in East Africa, with development partners and international trade and transport specialists, met in Arusha, Tanzania from February 24-25, 2010 to review ongoing work on a Corridor Diagnostic Study (CDS) of East Africa's two main trade and transport routes: the Northern and Central corridors. The study is being undertaken following calls for a well-researched action plan to improve the infrastructure and institutional framework along the two corridors to improving transit facilitation, such as reducing the time to clear goods at border posts. The success of the meeting lay in the sharing of information about corridor development initiatives and plans underway by the East African Community (EAC), member governments, private firms and development partners. The core of the CDS is a comparison of the time, cost, and reliability of the Northern and Central corridors with international standards, using FastPath, a comprehensive transport diagnostic tool.

[East African Corridors](#): The collaborative source for corridor analytics, geocoded media, and up to date statistics. A component of the East African Corridors initiative is the development of a transport projects database and mapping. The result will be an [interactive GIS map](#) with the ability to: Select the projects from



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drop down menus, Export data to Excel View project photos, Download relevant reports. [Source: Servir Community Blog]

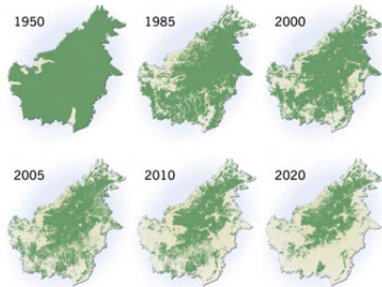
Urban and peri-urban agriculture in developing countries studied using remote sensing and *in situ* methods



Urban farming, practiced by about 800 million people globally, has contributed significantly to food security and food safety. The practice has sustained livelihood of the urban and peri-urban low income dwellers in developing countries for many years. Remote sensing technique provides spatially consistent data sets and allows farmlands to be mapped at relatively low cost. It also provides reliable historical time series data, which when combined with future repeated observations facilitate in-depth quantification of changes in farmland sizes. Ghana's Accra region, similar to most developing nations, has paucity of data that has deterred systematic monitoring and managing urban

farmlands. The plausible method of assessing farmland change in Accra is to use an integrated approach. This method involves mapping farmland boundaries from archival data sources (aerial photographs), recent data sources (satellite imageries) and future data sources (satellite imageries) in digital format ready for use in GIS environment. Archival data, in the form of near vertical aerial photographs provide rich information about the state of urban farmlands in Accra. This information will facilitate the development of a farmland monitoring scheme for Accra and form the basis for developing sustainable policies to effectively manage urban farming practices in Accra.

Turning to the matrix: a more accurate way to predict extinction



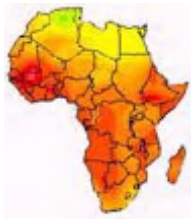
According to most conservationists the globe is striding into the midst of the Sixth Mass Extinction. Species populations worldwide are dropping and in many cases species are vanishing all together due to pollution, climate change, poaching and hunting, over-consumption, invasive species, and exotic diseases, but no threat proves more pervasive and devastating for the world's species than habitat loss. Discovering where species are most in trouble and where they are relatively secure has become a passion for many conservationists since such information allows attention and funds to be focused to the right places. Scientists have long employed the 'island biogeography theory' to decipher species' vulnerability, but a new model announced in a paper in

Conservation Biology is more accurate than island biogeography at predicting trouble spots and extinctions. Lian Pin Koh, the co-author has developed a matrix-calibrated model that takes account of the specific response of the organisms to each component of matrix. The model combines habitat loss with a species' sensitivity to surrounding matrices to determine the likelihood of extinction. The matrix model was tested against the conventional island biogeography theory and countryside model, in a "prediction accuracy competition". The test looked at survival of bird species in 20 biodiversity hotspots.

To begin helping conservationists immediately, Koh has built a working matrix model on-line called the [Species Extinction Calculator](#). The calculator measures up to three different matrices, as well as allowing conservationists to tinker with the number of forest fragments and the edge effect. An additional [Species Extinction Calculator - Multiple Landscapes](#) allows one to measure the extinction rates in various forests and compare them. As well as being surprisingly addictive, the Species Extinction Calculator is an incredibly useful tool for saving species.

Identification and mapping of soil erosion areas in the Blue Nile-Eastern Sudan

Previous research in Sub-Sahara Africa has singled out the Upper Blue Nile as an erosion prone area that is recommended for further monitoring and evaluation. In this study a qualitative soil erosion area model was suggested. The model benefits from advances in GIS and remote sensing fusion techniques. The model makes use of the well tested methods of supervised classification using maximum likelihood (MLC). Generalisation of ASTER classification results using MODIS for capturing a regional impression of the spatial distribution of erosion is employed. Key to model success is development of proper validation procedures. The model can be used to study longer-term changes in erosion using images from different years.



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The paper is part of a set of studies to evaluate the spatial and temporal variability of soil water in terms of natural as well as land-use changes as fundamental factors for vegetation regeneration in arid ecosystems in the Blue Nile-Sudan. The study was conducted to determine whether automatic classification of multispectral Advanced Space borne Thermal Emission and Reflection Radiometer (ASTER) imagery could accurately discriminate erosion gullies. Shuttle Radar Topography Mission (SRTM) is used to orthoproject ASTER data. A maximum likelihood classifier is trained with four classes, Gullies, Flat Land, Mountains and Water and applied to images from March and December 2006. Validation is done with field data from December and January 2006/2007, and using drainage network analysis of SRTM digital elevation model. The study site is representative of the wider Blue Nile province, and the approach presented could be applied to larger areas.

Geomatics in complex humanitarian emergencies

Since the mid-19 90s the media has been increasingly dependent on satellite images, maps and three-dimensional terrain visualizations to communicate stories about natural and human-induced disasters around the globe. Almost any report on the Darfur Crisis, Iraq War, or the Indian Ocean Tsunami exploits a host of powerful geospatial technologies. What are these technologies, and how are they currently being used to respond to complex humanitarian emergencies (CHEs)? Geomatics involves the integrated acquisition, modeling, analysis, presentation and management of spatially referenced data (i.e. any type of data that includes its location on earth), to support decision-making.

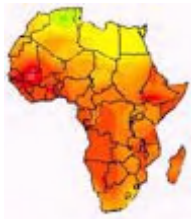
Geomatics enjoys an unprecedented level of use by humanitarian organizations involved in CHEs around the world. The declassification of military satellite data and international accessibility of geospatial technologies has made the use of geomatics in CHEs a reality, and a critical tool to decision makers at all levels. Key applications of geomatics for CHEs can be summarized as follows:

- *Cartography*: land use, infrastructure mapping, demographical analysis, logistics planning, etc.
- *Media / Communications*: status reporting, monitoring & evaluation, program assessment, etc.
- *Humanitarian Intelligence*: near real-time crisis analysis, command & control, mission planning, damage assessment, visualization, lines of communication assessment, etc.
- *Crisis Simulation*: mission rehearsal, nuclear/chemical/biological/radiological/environmental
- incident modelling, migration patterning, alternative response assessment
- *Engineering*: reconstruction, design, surveying, facility management, water & sanitation, etc
- *Environmental Planning*: crop cultivation, resource assessment, vegetation analysis, etc.
- *Hazard Management*: seismic analysis, refugee camp planning, flood mitigation, slope stabilization, aid worker security, refugee protection, locust monitoring, terrorism, etc.
- *Vulnerability Assessment*: early warning systems, famine, pandemics, inter-ethnic crime, etc.
- *Risk Reduction*: “hotspots” identification, preventative CHE intervention, humanitarian law enforcement, international financial aid mobilization, education of affected populations, vaccination planning, public health, etc.
- *Organizational Management*: operational efficiency maximization, location optimization, financial analysis, program assessment, personnel training, donor communications, etc.

GIS data showing the skies of Europe are filled in volcanic ash

The 2010 eruptions of Eyjafjallajökull are a series of major volcanic events at Eyjafjallajökull in Iceland. They caused significant disruption to air travel across western and northern Europe. Seismic activity started at the end of 2009, and led to a volcanic eruption on 20 March 2010 whose Volcanic Explosivity Index (VEI) was 1. The plume of ash from a later ongoing eruption beginning on 14 April 2010 led to widespread disruption of air travel in Europe from 15 April, grounding planes and affecting the travel plans of millions of passengers worldwide. The aftermath of the 2010 Eyjafjallajökull eruptions adversely affected travel around the world, with air space across more than 20 European countries remaining largely closed until April 20.

- On Sat., April 17, 2010, the Advanced Land Imager (ALI) instrument onboard NASA's Earth Observing-1 (EO-1) spacecraft obtained this false-color infrared image of Iceland's Eyjafjallajökull volcano from an altitude of 705 kilometers (438 miles). The EO-1 spacecraft is the satellite remote-sensing asset used by the Volcano Sensor Web developed by NASA's Jet Propulsion Laboratory, and being used to monitor this, and other, volcanic eruptions around the world.
- The CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observations) satellite collected observations across Europe and captured image of the Eyjafjallajökull ash cloud as it continued to drift over the continent. Unlike other satellites that provide a bird's-eye view of the ash cloud's horizontal spread, CALIPSO provides a unique vertical profile of a slice of the atmosphere.



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African farmers said they were losing 1.3 million dollars a day in fresh produce that should be hitting European markets. Airlines estimate that the lost traffic is costing Euro 200 million / day. These are just a few examples of the obvious outcomes of lost airplane traffic due to the situation. It should be obvious that improved satellite availability would greatly improve monitoring and modelling of the ash plume. What would it take to regularly monitor the situation? One might suggest that a combination of upper level sensors, satellite images and crowdsourcing efforts would fill in some blanks. The economic and social impacts that arise due to lack of spatial information and data useful to modelling and mitigation are suddenly exposed and apparent to us. With better data for modelling, mapping and monitoring better decisions could have been made about flexible flying times for different places rather than shutting down the entire continent.

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.

African Reference Frame (AFREF) and GNSS Data Processing Training Course, 24 August - 3 September 2010, RCMRD, Nairobi, Kenya

Since 2006, the RCMRD in conjunction with the Center of Geophysics of the University of Lisbon, Portugal and HARTRAO South Africa have been conducting an annual course on African Reference Frame (AFREF) and Global Navigation Satellite System (GNSS) Data Processing at RCMRD offices in Nairobi, Kenya. This year, the course will be held on 24 August - 3 September 2010. The content includes:

- Introduction to Global Navigation Satellite System (GNSS)
- Reference systems, datum, datum transformations and coordinate systems
- IGS data and products
- AFREF concepts and progress
- Establishment of Continuously Operating Reference GNSS Stations
- Practical field works on Static GNSS surveys
- GNSS data post processing
- On line GNSS Data processing

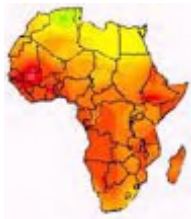
Application deadline: 23 July 2010. For further information contact: Muya Kamamia at muyack@rcmrd.org or rcmrd@rcmrd.org. Website: <http://www.rcmrd.org>.

GIS course in sustainable land use (Sustainable Land Use 723), 9-14 August 2010, University of Stellenbosch, South Africa

The course will present an integrated approach to planning the use and management of land resources. It will consider the involvement of all stakeholders in the process of decision making on the future of the land, and the identification and evaluation of all biophysical and socio-economic attributes of land units. This requires the identification and establishment of a use or non-use of each land unit that is technically appropriate, economically viable, socially acceptable and environmentally non-degrading. The course will expose students to:

- The theory of integrated land use planning.
- Land use planning techniques.
- Participatory techniques for gathering socioeconomic data.
- The geo-informatics tools available to land managers and decision makers.
- Use of an open source GIS, MapWindow, to demonstrate the practical application of spatial software tools and GIS data to land use planning and management. Contact: Jos Liebenberg, University of Stellenbosch, crses@sun.ac.za.

Computer Foundation GIS Workshop, 10-15 October 2010



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According to your skill level or previously attended courses, you may register in one of the following groups listed below:

- Introduction to ArcGIS 10
- Extended ArcGIS 10
- Geodatabase and ArcGIS server 10
- GPS Basics and Fieldwork

For further information, contact: charmmainb@cf.co.za or lorainew@cf.co.za.

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.

Course on Demographic and Health Surveys, June 21-25, 2010, Nairobi, Kenya

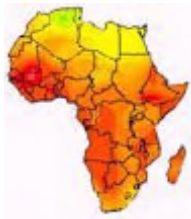
University of Nairobi Enterprises and Services Ltd is offering professional short course on Demographic and Health Surveys. The course provides an overview of the DHS surveys and how to use DHS data to improve health programs. Demographic and Health Surveys (DHS) are nationally-representative household surveys that provide data for a wide range of monitoring and impact evaluation indicators in the areas of population, health, and nutrition. Demographic and Health Surveys provide countries with a standardized tool to obtain indicators for the effective monitoring of national programs such as those on HIV/AIDS, health and family planning services available in a country. Contact: Prof. Mwanthi, mmwanthi@uonbi.ac.ke.

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. Special arrangements can be made on request for client-site training.

	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 (NEW)	3
• Building Geodatabases	4
• Data Production and Editing Techniques (NEW)	4
Analysis with ArcGIS	
• Performing Analysis with ArcGIS Desktop (NEW)	4
• Working with ArcGIS Spatial Analyst	4
• Working with ArcGIS Network Analyst	3
Cartography with ArcGIS	
• Creating and Publishing Maps with ArcGIS (NEW)	4
• Working with Cartographic Representations (NEW)	3
Enterprise GIS	
• Introduction to ArcGIS Server	3
• Introduction to the Multiuser Geodatabase	3
• Managing Editing Workflows in a Multiuser Geodatabase (NEW)	4



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Programming with ArcGIS

- Introduction to Programming ArcObjects using VBA 4
- Introduction to Programming ArcObjects using .NET (NEW) 4
- Introduction to Geo-processing using Python (NEW) 3

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 May 2010

Contact: Midrand: Queen Mofokeng, qmofokeng@esri-southafrica.com; Durban: Patricia van Schalkwyk, pvanschalkwyk@esri-southafrica.com; Port Elizabeth: Queen Mofokeng, qmofokeng@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 \(RECTAS\)](http://www.rectas.org) 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

- [Environmental Impact Assessment and Strategic Environmental Assessment using spatial decision support tools](#) (6 weeks). Starting date: 7 June 2010. Deadline for application: 17 May 2010. [Register](#).
- [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. Dealine 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](#).

MSc and PG Diploma

- [Water Resources and Environmental Management](#) (Mc degree -18 months), Netherlands. Starting date: 13 Sep 2010. Deadline for application: 1 July 2010. [Register](#).
- [Water Resources and Environmental Management](#) (PG Diploma - 9 months), Netherlands. Staring date: 13 September 2010. Deadline for application: 1 July 2010. [Register](#).

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)



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- [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

[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.

[Training Course: Offre et Programmation des séminaires de formation Pour le premier semestre de l'année 2010](#), Ouagadougou, Burkina Faso

Les séminaires de formation à l'IAVS visent le renforcement des capacités d'approche globale de la problématique des changements climatiques en lien avec les questions de développement et la maîtrise des outils et des méthodologies pour la prise en compte des considérations liées à ces changements climatiques dans les politiques et actions de développement. La programmation des séminaires pour le premier semestre de l'année 2010 se présente comme suit:

- Séminaire méthodologique sur la prise en compte des changements climatiques dans la planification du développement national - Du 24 au 28 Mai
- Elaboration et mise en œuvre de campagnes d'information et de sensibilisation sur les changements climatiques et leurs implications - Du 21 au 25 juin

[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

[The Harold and Margaret Sprout Award](#)

The award is given annually to the best book in the field – one that makes a contribution to theory and interdisciplinarity, shows rigor and coherence in research and writing, and offers accessibility and practical relevance. Nominated books should address some aspect of one or more environmental, pollution or resource issues from a broadly international or transnational perspective, including works in (for example) global, interstate, transboundary, North-South, foreign policy, comparative or area studies. Environmental subjects of books can include (for example) environmental law, diplomacy, transnational activism, natural resource use, global change, sustainable development, biodiversity, transboundary pollution control, and the like.

Nominated works must be published during the two years prior to the year they are nominated for. Books with a copyright date of the award year are welcome provided that they are released by the previous year's end. Each publisher may nominate more than one book, and books nominated for the prior year can be re-nominated.



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Publishers wishing to nominate books should send one copy of each book to each member of the Sprout Award Committee. The [names and addresses](#) of committee members are listed on the “officers” page. Deadline for nominations and receipt of copies of nominated books: 1 August 2010.

[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, 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 the fight against climate change, along with the improvement of local populations living standards. NGOs, professional bodies, women and youth groups or associations and also private companies (committed to protect biodiversity) 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.

[eLC Research Fellowships at the University of Catalonia in Barcelona](#)

The eLearn Center (eLC) at the Universitat Oberta de Catalunya (Open University of Catalonia) in Barcelona is offering Research Fellowship positions for outstanding researchers from around the world. The positions offer the opportunity for selected researchers to spend time at the center in Barcelona to work on their research interests in e-learning and interact with the eLC's researchers and doctoral students. Research fellows can state for duration of 3 to 12 months beginning anytime between 15 September and 31 October 2010. The current call for applications is focused upon faculty and students managing, making the most of and regulating their time in online educational environments, especially, via mobile devices; immersive environments and emerging technologies, tools and platforms in the framework of open social learning; and leading and organizing e-learning, paying special attention to sustainable and effective integration of ICTs in higher education.”

Researchers should have distinguished research and innovation record in at least one of the proposed areas. They should have a position at a university or research center and should be fluent in English and/or Spanish. Grant support includes providing compensation equivalent to two-thirds of the current gross salary received by the applicant as well as support for covering one round trip from the applicant's current location to Barcelona by economy travel. Applicants should submit a complete CV, three letters of recommendation from experts in the proposed areas and brief research project (5 pages max) describing their intended activity in Barcelona. Deadline for application: 15 May 2010.

[UK's IHLFS's Round 2 Funding now open](#)

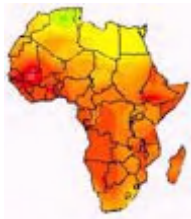
The IHLFS is a three year scheme which supports Health links between health institutions in developing countries and the UK. Start-up grants of up to £3,000 and project grants of up to £15,000 a year for one year or 22 months can be proposed by eligible organizations under this scheme. The following African countries are eligible to apply:

- Start-up Grants: Democratic Republic of Congo, Ethiopia, Ghana, Kenya, Malawi, Mozambique, Nigeria, Rwanda, Sierra Leone, Sudan, Tanzania, Uganda, Zambia and Zimbabwe.
- Project Grants: Ethiopia, Ghana, Kenya, Rwanda, Malawi, Mozambique, Nigeria, Sierra Leone, Tanzania, Uganda, Zambia.

Deadline for application: 31 May 2010.

[William T. Grant Scholars Program: Opportunity for Young Researchers in NGOs](#)

The William T. Grant Foundation has announced that it is now accepting applications for its William T. Grant Scholars Program. Young researchers or professionals pursuing research and employed in a nonprofit organization within or outside United States can apply for this opportunity. As William T. Grant Scholars, the selected candidates will each receive a grant of \$350,000 distributed over a period of five years. Early-career



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researchers in social, behavioral or health sciences can apply. The program prefers to support “applicants who already have a promising track record, but seek a qualitative shift in their trajectory as researchers.” Grants will be made available to organizations where the selected young researchers are working. Only tax-exempt nonprofit organizations or NGOs are eligible to receive these grants.

- Applicants must have received their terminal degree within seven years of submitting their application.
- Employed in career-ladder positions at nonprofit institutions. The award may not be used as a post-doctoral fellowship.
- Applicants outside the U.S. are eligible, but as with U.S. applicants, they must be pursuing research that has clear, compelling theory and either policy or practice implications for the settings of young people ages 8 to 25 in the United States.
- Applicants of any discipline are eligible.

Deadline to apply: 7 July 2010.

[Ramsar Small Grants Fund](#)

The Ramsar Small Grants Fund (SGF) was established in 1990 as a mechanism to assist developing countries and those with economies in transition in implementing the Convention and to support the conservation and wise use of wetland resources, with a strong human and social dimension. Eligibility is restricted to countries on the List of Aid Recipients established by the Development Assistance Committee (DAC) of the Organization of Economic Cooperation and Development (OECD), effectively meaning developing countries and countries with economies in transition. Projects may be proposed and implemented by any agency, NGO, or individual, but proposals MUST be endorsed and monitored by the Administrative Authority (the Ramsar implementing agency) in the Party's government, and seldom is more than one proposal approved from the same Party in any year. Successful proposals receive 80% of the allocated funds upon signature of the contract and the remainder upon submission of an adequate final report, but countries from which adequate final project reports have not been received may be denied further consideration for funding until those outstanding project dossiers have been closed. Deadline: 30 June 2010.

[Gates Foundation's Grand Challenges in Global Health](#)

Bill & Melinda Gates Foundation's Grand Challenges Explorations in Global Health (Round 5), “launched in 2003 to accelerate the discovery of new technologies to improve global health,” is currently seeking applications of innovative ideas that could lead to new vaccines, diagnostics, drugs, and other technologies targeting diseases that claim millions of lives. The Grand Challenges Explorations seeks only a short two-page application processed in a rapid 4-months time and the selected projects receive initial grants of \$100,000 (Phase I) and further a follow-on grant of \$1,000,000 (Phase II). The Grand Challenges Explorations is open to both foreign and domestic non-profit organizations, for-profit companies, international organizations, government agencies and academic institutions. Grants will not be provided to individuals.” Proposals can be submitted to the Round 5 by 19 May 2010.

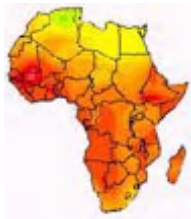
[DFID's Development Innovation Fund: An Opportunity for Small NGOs](#)

The UK's [Department for International Development](#) (DFID) has launched the Development Innovation Fund (DIF) specially “aimed at community based organizations involved in providing specific small scale, one-off support that directly targets poverty in the developing world and includes a significant development awareness component in the UK.” Small-scale project proposals will have a ceiling of £60,000. Although support for NGO projects will be for one year, the total allocation made for this Fund is £7 million.

DIF will support “a very broad range of projects targeting poverty in the developing world and include a significant development awareness component in the UK” and project activities can include “health camps, provision of text books, education/learning materials or other appropriate technology materials, skills exchange programmes.” Application process has three rounds. Small NGOs have been defined under this Fund as those with an average annual income of less than £500,000 over the past 3 years. Applications can be submitted any time.

[Rothamsted International Fellowship Scheme](#)

The primary objective of this prestigious Fellowship scheme is the exchange of vital scientific skills and technologies relevant to the agricultural and environmental needs and aspirations of developing and emerging countries. The Fellowships are available to scientists of proven ability, working in developing or emerging countries, to pursue research, learn new techniques or undertake other forms of study in



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agricultural sciences by working with researchers here at Rothamsted. Applications may be made for research in agricultural, environmental and mathematical sciences pertaining to ongoing research programmes being carried out at Rothamsted. The research/study to be undertaken by the Fellow should be in a field of direct relevance to development issues of the applicant's home country.

Awards will be for a normal minimum of six months and a maximum of one year. Cases can be made for split awards, involving return to the home institution where this is integral to the research; the scientific value will be assessed against the additional travel costs. In any event RI will not make an initial commitment for more than one year. Deadline: 7 May 2010.

[IUCN Small Grant Program for Strengthening Civil Society for Sustainable Forest Conservation](#)

Under the Central African Regional Program for the Environment, the International Union for Conservation of Nature (IUCN) is offering grants to local NGOs, CBOs, non-governmental research centres, independent researchers, university students, women and minor groups for implementing projects on sustainable conservation of forests in Central Africa. The objective of this Small Grant Program is "strengthening civil society for sustainable forest conservation in Central Africa." Deadline: 30 June 2010.

[World Habitat Awards 2010](#)

Individuals, organizations and governmental agencies with innovative and practical solution to housing needs and problems from any country of the world can apply for the World Habitat Awards. Two winners are selected and awarded with a prize each carrying an amount of £10,000. The award is presented at annual United Nations global celebration of World Habitat Day.

Projects & approaches are sought that demonstrate practical, innovative and sustainable solutions to current housing issues faced by countries of the global South as well as the North. Can be transferred or adapted for use as appropriate. View the term habitat from a broad perspective and bring other benefits as well, such as energy or water saving, income generation, social inclusion, community and individual empowerment, capacity building or education. Deadline: 1 November 2010.

[World Summit Youth Award](#)

The WSYA (World Summit Youth Award) selects and promotes best practice in e-Content and technological creativity, demonstrates young people's potential to create outstanding digital contents and serves as a platform for people from all UN member states to work together in the efforts to reduce poverty and hunger, and to tackle ill-health, gender inequality, lack of education, lack of access to clean water and environmental degradation. The finalists and category winners will be invited to the WSA Events in September 2010 in New York City and at the UN Headquarters. To be eligible:

- The project must be initiated and executed by youth under the age of 30
- The product should be fully functional and operational at the time of submission; projects which do not function will not be juried
- It must be accessible over the Internet (whether it is designed for fixed line, broadband or mobile use)

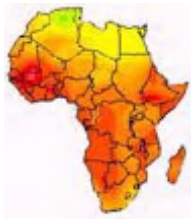
Submissions must be made under one of the six categories: Fight Poverty, Hunger and Disease; Education for all; Power to Women; Create your Culture, Go Green and Pursue Truth free of offensive or plagiarized content which violate dignity or human rights will not be evaluated made by an authorized person. Deadline: 20 June 2010.

[Funding and Partnership Opportunities for NGOs in USAID's Global Development Alliances](#)

Since 2001, USAID, through Global Development Alliances, has cultivated more than 900 public-private alliances with over 1,700 individual partners to contribute billions in combined public-private resources. Through the Global Development Alliances, USAID can facilitate access to broader financing options, assist in skill and knowledge development, and apply its extensive knowledge of country environments to help reduce the risks of investing in some of the world's poorest countries. This solicitation is encouraging and creating the competitive environment for new alliances to be created in FY 2010. Closing date: 30 September 2010.

[InnoCentive Challenges to find Innovative Solutions for World's Water Problems](#)

In order to find innovative solutions to water-related problems faced by local communities around the world, GlobalGiving, [InnoCentive](#) and the [Rockefeller Foundation](#) have come together to sponsor challenges in this area. While the challenges will help find solutions for the water problems, the solution providers will also earn



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cash rewards of up to US \$40,000. The solutions will be implemented by nonprofits or NGOs some with the support of the Rockefeller Foundation. Social innovators, creative thinkers, technologies, engineers and entrepreneurs are invited to participate in these challenges by joining the InnoCentive network. The challenge under this program for Africa is Make Water from Lake Victoria Safe to Drink! Reward: \$20,000 USD. This Challenge requires a design for an easy-to-use and robust method that purifies water from Lake Victoria so that it is safe to drink. This is a Theoretical Challenge that requires only a written proposal to be submitted. Deadline: Mar 11, 2010.

[US Bureau of Population, Refugees and Migration \(PRM\) to strengthen evidence-based decision making, conduct assessments and research relevant to PRM funded humanitarian programs worldwide](#)

US-based organizations and non-US international NGOs can apply for this funding opportunity from the US State Department's Bureau of Population, Refugees and Migration (PRM) to Projects to strengthen evidence-based decision making tools for use in humanitarian programs, including those funded by PRM; and Projects involving research, assessment, or formative evaluation that could inform and strengthen PRM policy and programming for urban refugees/urban displacement; refugees in protracted situations of displacement for five or more years; stateless persons.

- 1) Proposals to strengthen evidence-based decision making tools for humanitarian operations must focus on measuring performance, improving data collection, quality, and/or coordination, and/or attaining minimum international standards. Of particular interest are projects that identify data collection mechanisms or good practices in urban settings. Selected proposals will likely focus on one or two of the following areas: Food security, Nutrition, Health, Protection, Water, Sanitation, and Hygiene (WASH), Livelihoods, and/or Primary Education.
- 2) Proposals involving research, assessments, or formative evaluation should include policy and program implementation recommendations to relevant parties.

PRM will accept proposals that are country or population-specific as well as those that include multiple countries/populations/regions and analysis across different cases. Proposals from any organization, including universities and research institutes proposing to work in the above mentioned areas. Projects submitted with budgets up to \$300,000 will be given priority. Deadline for application: 28 May 2010.

[Humboldt Research Fellowships for Experienced Researchers](#)

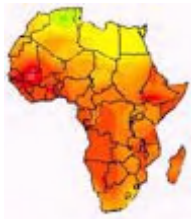
Humboldt Research Fellowships for experienced researchers are the instrument with which the Alexander von Humboldt Foundation enables highly qualified scientists and scholars from abroad who completed their doctorates less than 12 years ago to spend extended periods of research (6 to 18 months; may be divided up into a maximum of three blocks) in Germany. Candidates are expected to have their own clearly defined research profile. This means they should usually be working at least at the level of assistant professor or junior research group leader, or be able to document independent research work over a number of years. Scientists and scholars from all disciplines and countries may apply. Research projects are carried out in cooperation with academic hosts at research institutions in Germany. Candidates choose research projects, and the host in Germany is required to prepare a research plan. Details of the research project and the time schedule must be agreed upon with the prospective host in advance. The duration of the research fellowship (6 to 18 months) may be divided up into a maximum of three visits lasting a minimum of 3 months each. No more than 36 months may elapse between the beginning of the first stay and the end of the last stay. Short-term visits for study and training purposes or for attending conferences are not eligible for sponsorship. The fellowship is worth EUR2450 per month. This includes a mobility lump sum and a contribution toward health and liability insurance. Deadline for application: 31 December 2010.

Employment Opportunities

[Principal Adviser to the Executive Director](#), Nairobi, Kenya

The United Nations Environment Programme (UNEP) is the United Nations system's designated entity for addressing environmental issues at the global and regional level. The incumbent should have:

- Proven ability to provide advice to the ED, DED and the SMT on a broad range of environmental policy issues, organizational reform and administrative issues to facilitate decision-making and change management.



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- Ability to draft reports, policy briefs and to meet commitments and achieve results. Leadership: Strong managerial and supervisory skills to lead and coordinate strategic programmatic and reform teams and translate vision into action; strong negotiating skills; good judgment and decision making skills, drive for change and improvement, and ability to analyze complex human resource, financial, administrative, management, policy and programme issues.
- Advanced university degree in Economics, Environmental Studies, Law, Social Sciences, Management or a first university degree with a relevant combination of academic and professional qualifications.
- Minimum 15 years of professional experience, including in environmental policy analysis and development and related operational issues required. Understanding of the links between policy development and implementation with experience from different sectors, combined with the ability to think strategically and to clearly articulate a strategic direction.

Apply online to Recruitment@unon.org. Deadline: 20 June 2010.

Senior Human Settlements Officer, Nairobi, Kenya

The United Nations Human Settlements Programme, UN-HABITAT, is the UN agency for human settlements. It is mandated by the UN General Assembly to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all. The incumbent should:

- Demonstrated ability to prepare project documents and funding proposals.
- Demonstrated ability to provide expert advisory services and developing and supervising the execution of priority projects and programmes in a cost effective and efficient manner.
- Advanced university degree (Master's degree or equivalent) in architecture, civil engineering, urban and regional planning, sociology, economics or physical sciences relevant to development and management of human settlements. A first university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of ten years of responsible experience in human settlements projects and programmes at national level, of which at least five of similar experience at the international level. Experience in human settlements development fields. Practical and relevant experience in the region.

Apply online to Recruitment@unon.org. Deadline: 20 June 2010.

Information Systems Assistant, Nairobi, Kenya

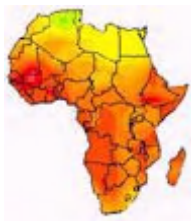
The United Nations Environment Programme (UNEP) is the United Nations system's designated entity for addressing environmental issues at the global and regional level. The incumbent should have:

- Knowledge of organizational information infrastructure, including hardware, software and application systems. Knowledge of relevant programming language(s) and ability to use programming skills to develop information systems; Knowledge of system development workflow and document flow processes, ability to conduct research and gather information from a wide variety of standard and non-standard sources; Ability to perform a wide range of application software development and maintenance tasks under minimum supervision; Willingness to share information and mentor others; Ability to work fast and remain calm under extreme pressure;
- Considers all those to whom services are provided to be “clients” and seeks to see things from clients’ point of view; establishes and maintains productive partnerships with clients by gaining their trust and respect; monitors ongoing developments inside and outside the clients’ environment to keep informed and anticipate problems; meets timeline for delivery of products or services to client.
- Completion of secondary school is required. Supplemental courses/training in information systems analysis and programming, systems administration and maintenance and software development is desired.
- A minimum of 7 years of progressively responsible experience in information systems analysis and programming, database and systems administration and maintenance, web development and content management and user support or related area.

Apply online to Recruitment@unon.org. Deadline: 20 May 2010.

Environmental Affairs Officer, Addis Ababa, Ethiopia

This post is located in the Food Security and Sustainable Development Division (FSSD) of the United Nations Economic Commission for Africa (ECA). Under the overall supervision of the Director FSSD and direct supervision of the Chief, Environment and Sustainable Development Section (ESD), the incumbent is responsible for undertaking analytical studies and policy analysis in a wide range of sustainable development issues relevant to Africa; provides quantitative and qualitative analysis and substantive support to ECA's



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advisory body on sustainable development; provides sustainable development related inputs relevant to Africa into reports of the UN Commission on Sustainable Development (CSD), the Economic and Social Council (ECOSOC) and the Secretary General; collects, analyzes, synthesizes and disseminates information on environment and sustainable development relevant to Africa, etc.

- Advanced University Degree (Master's degree or equivalent), in environmental economics, natural resource economics or related field is required. Post graduate training in environmental science/management is an advantage. A first-level university degree with a relevant combination of academic qualifications and experience may be accepted in lieu of advanced university degree.
- Minimum of seven years progressively responsible professional experience in economic research and analysis, policy formulation, application of economic principles and concepts to environment and sustainable development issues. Highly desirable if this experience includes at least three years of relevant working experience in the context of Africa.

Apply online to Recruitment@unon.org. Deadline: 21 June 2010.

Programme Management Officer (Climate Policy), Addis Ababa, Ethiopia

This post is located in the African Climate Policy Centre (ACPC) of the Economic Commission for Africa (ECA). Under the overall guidance of the Director of Food Security and Sustainable Development Division (FSSDD) and the direct supervision of the Coordinator of ACPC, the incumbent will be responsible for the following duties: Review, analyse and finalize the preparation of the ACPC/ClimDev-Africa Initiative medium-term plan and its revisions, taking into account recommendations and decisions of Advisory boards and Technical Committees of the Centre; Review, analyse and finalize cost estimates and budget proposals, in terms of staff and non-staff requirements of the Centre and the ClimDev-Africa Initiative; ensure compliance with the medium-term plan of the Centre; Review and analyse the financial implications of project proposals that are submitted to ACPC/ClimDev-Africa Initiative for financial support, and make appropriate recommendations to the Management; Manage and monitor budget implementation and recommend reallocation of funds as necessary; Ensure that financial resources are utilized to implement activities in accordance with ACPC budget and allotments issued and keep track of funding proposals.

The successful candidate should have:

- Advanced university degree (Master's degree or equivalent) in business administration, management, Economics, and related field. A first-level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- Seven years progressively responsible experience in programme management and budgeting, monitoring and evaluation of programmes, policy analysis, or programme coordination is required. Pertinent and relevant experience in project risk assessment and management, analytical and quantitative skills.

Apply online to Recruitment@unon.org. Deadline: 20 June 2010.

Regional Director – Kenya/Somalia, Kenya

Solidarités is a humanitarian organization which provides aid and assistance to victims of war or natural disaster. The Regional Director will manage Solidarités' mission in Kenya and Somalia and will be the official representative of Solidarités for these two countries.

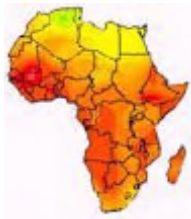
The successful candidate should have :

- Master degree in political science, international law or any relevant studies regarding the political analysis to provide
- At least 2 years of field experience with NGOs at a senior management position (Country Director, Programs Coordinator)
- Proven 2 years experience of Security management in Hardship area - At least 5 years of experience with NGOs, experience in fund raising and donor relation, experience in team management (150 staff)
- Proven capacity in geopolitical analysis - very comfortable with the usual software and internet - GIS proficiency is an added advantage –
- English: fluent with excellent writing capacities - French or Kiswahili remains desirable skills - Somali is a clear added advantage.

Send a CV and cover letter on www.solidarites.org. Closing date: 4 June 2010.

Livelihood Expert Consultant, Turkana, Kenya

Solidarités: Solidarités is a non- profit humanitarian association. The livelihood expert will: - design the method of collecting data and information, collect and analyse all the necessary information to answer the



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key questions and describe the livelihoods of the population living in the assessed zone - use the logistic and financial means to achieve the following results: Analysis of livelihood vulnerability and risk; Description /mapping of livelihood zones; Livelihood baseline profiles (household typology in each livelihood zone); Description of mechanisms of accessing to and sharing natural resources used by the different livelihood groups; Description of a "normal" year for each livelihood zone.

The successful candidate should be:

- Expert in Food security sector strongly experienced in Food Security program management and experienced in humanitarian program evaluation.
- Strong analytical, writing and interpersonal skills will be required.
- Mastering of participatory methods for information collection is essential. Knowledge of Kenyan context will be highly appreciated. Fluent English is compulsory.

Send your CV and cover letter on www.solidarites.org. Application deadline: 4 Jun 2010.

Other

Examples of environmental changes sought

Gyde Lund is looking for examples of both positive and negative environmental changes that have taken place in the past 30 or so years in Libya and in the Nile Basin. He prefers those documented by remote sensing but will also consider other sources. If you have anything to share or can steer him to someone who can help, please contact Mr. Lund at gyde@comcast.net. Forest Information Services, 6238 Settlers Trail Place, Gainesville, VA 20155-1374 USA, Tel: +1-703-743-1755.

[Kenya scores high marks in matters green](#)

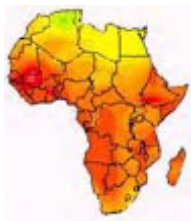
Kenya is ranked among six countries that have improved in terms of low carbon emissions in the first quarter of this year according to a report. The country together with Rwanda, India, Mexico, Indonesia and Philippines has the potential for lower carbon emissions despite the uncertainty surrounding international climate change negotiations. United Nations Environment Programme spokesperson Nick Nuttall said Kenya's Green Energy Foundation supports climate competitiveness by promoting reforestation, use of biofuels and solar cookers among other green technologies to reduce carbon emissions.

The *2010 Climate Competitiveness Index* (CCI) produced by an independent non-profit institute, AccountAbility in partnership with UNEP, tracks national progress in creating green jobs and economic growth. It investigates "Climate Accountability" to determine if a country's strategy is clear, ambitious and supported by stakeholders. It studied 95 countries that produce 96 per cent of carbon emissions. AccountAbility's managing director Alex MacGillivray said CCI shows countries that they can develop political leadership, stronger institutions and engage with stakeholders to deliver climate friendly products. "The Climate Competitiveness Index is the essential guide to understanding opportunities and accountability in the multi-trillion dollar low carbon economy of the new decade," he said. Brazil, South Africa, India and China are progressing towards climate competitiveness. Sweden, Denmark, Germany, Japan and France show most consistent progress combining accountability and performance, the report says. [Source: Daily Nation, 27 April, 2010]

[Ugandan government 'was warned' of landslide tragedy](#)

Farmers need to be educated about growing crops in at-risk regions to mitigate future slides, say scientists. Uganda's government failed to heed warnings from scientists about the devastating landslides in the mountainous eastern part of the country last month and was not prepared for the disaster, an expert has said. "The government had been warned of the impending disaster in Bududa, which lies on the slopes of Mount Elgon by the National Environment Management Authority (NEMA) and the Uganda Wildlife Authority (UWA)," Arthur Makara, executive director of Uganda's Science Foundation for Livelihoods and Development, said, "but the government never took any action and the consequence has been the loss of lives". So far there have been no further landslides. But the heavy rain currently pounding the region is expected to continue until the end of May, according to Laz Ocira, an official from the Ministry of Relief and Disaster Preparedness. Ocira said a much bigger disaster may be looming in Bududa's neighbouring district of Manafwa - another mountainous area in the Mount Elgon region. "I've seen cracks [in the land] myself and in some points they are 1.5 metres deep. They could cause a slip at anytime."

Satellite images reveal that more heavily-cultivated land in the uppermost parts of the mountain is on the verge of sliding at any moment, said Festus Bagoora, a natural resources management specialist at NEMA.



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"In all these districts, farming communities have encroached deeply into what were once pristine environments that had been national parks and forest reserves," he said. Makara called for education and awareness-raising for people who inhabit mountainous regions about avoiding cultivation along land contours and instead growing crops across them to cut the amount of water run-off. "They should also be educated on the use of terracing and construction of bunds that would trap run-off, helping water retention in their fields and reducing soil erosion significantly," he said.

[Population density corresponds with forest loss in the Congo Basin](#)

Africa's greatest rainforest ecosystem, the Congo Basin, has undergone significant deforestation and degradation during the past century. A new study in the open access journal *Tropical Conservation Science* examined whether or not there was a connection between population density and forest loss. Since the 1980s the Congo rainforest has had the highest rate of deforestation of any tropical region in the world. A combination of commercial logging, illegal logging, and clearing for agriculture, mining, and civil wars has devastated much of the forest. The booming bushmeat trade is another threat to the Congo's wildlife. The Congo rainforest is home to some of the world's most celebrated and endangered wildlife, including forest elephants, okapi, gorillas, chimpanzees, and bonobos. Some 10,000 animal species have been discovered in the Congo.

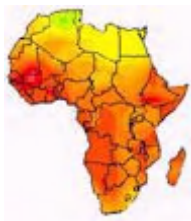
Using a classified Landsat ETM+ scene of 2001 to determine forest cover and 2000 UNEP data for population, the researchers found "highly significant" correlations between increasing population density and pressure on forests, including increasingly isolated forest patches. According to the authors, the paper's findings "confirm the influence of population density on the degradation of natural ecosystems". [Influence de la densité de la population sur la structure spatiale d'un paysage forestier dans le bassin du Congo en R. D. Congo](#). *Tropical Conservation Science* Vol. 3 (1):31-44.

[FAO publishes key findings of global forest resources assessment](#)

Globally, around 13 million hectares of forests were converted to other uses or lost through natural causes each year between 2000 and 2010 as compared to around 16 million hectares per year during the 1990s, according to key findings of FAO's most comprehensive forest review to date *The Global Forest Resources Assessment 2010*. The study covers 233 countries and areas.

The world's total forest area is just over four billion hectares or 31 percent of the total land area. South America and Africa had the highest net annual loss of forests in 2000-2010, with four and 3.4 million hectares respectively. Oceania registered a net loss, due partly to severe drought in Australia since 2000. Asia registered a net gain of some 2.2 million hectares annually in the last decade, mainly because of large-scale afforestation programmes in China, India and Viet Nam. In North and Central America, the forest area remained fairly stable, while in Europe it continued to expand, although at a slower rate than previously. Other key findings in the report included:

- Brazil lost an average of 2.6 million hectares of forest annually in the last ten years as compared with 2.9 million hectares per year in the 1990s while Indonesia's figures were respectively 0.5 and 1.9 million hectares per year.
- Primary forests account for 36 percent of total forest area but have decreased by more than 40 million ha since 2000. This is largely due to reclassification of primary forest to "other naturally regenerated forests" because of selective logging or other human interventions.
- The area of forest in national parks, wilderness areas and other legally protected areas have increased by more than 94 million hectares since 1990 and it now 13 percent of total forest area.
- Forests are among the world's chief carbon sinks. They store some 289 gigatonnes (Gt) of carbon in trees and vegetation. The carbon stored in forest biomass, deadwood, litter and soil together is more than all the carbon in the atmosphere. Globally, carbon stocks in forest biomass decreased by an estimated 0.5 Gt a year in 2000-2010, due to a reduction in total forest area.
- Fires, pests and diseases are causing increased damage to forests in some countries. Outbreaks of forest insects damage some 35 million hectares of forest annually. Extreme weather events such as storms, blizzards and earthquakes also took a heavy toll in the past decade.
- Seventy-six countries have issued or updated their forest policies since 2000 and 69 countries - primarily in Europe and Africa - have enacted or amended their forest laws since 2005.
- Data collection for the Global Forest Resources Assessment is becoming more comprehensive and precise. The new global estimate for 1990 to 2000 (close to 16 million ha per year) is higher than



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previously estimated (13 million ha), because it now also includes deforestation within countries that have had an overall net gain in forest area.

A remote-sensing survey of forests, led by FAO, sampling some 13,500 sites over a period of 15 years, will provide even more accurate data on global and regional rates of deforestation by the end of 2011. FAO's Global Forest Resources Assessments are published every five years. More than 900 specialists from 178 countries were involved in the Global Forest Resources Assessment 2010. The full report of this Assessment will be released in October 2010.

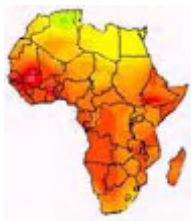
Is there a need of marked points in modern geodetic infrastructure?

Traditionally, the geodetic infrastructure was built up by triangulation networks, traverse networks and levelling networks. All detail measurements were connected to the nearest point in these networks. Heavy resources have been spent on maintenance of the networks to keep the infrastructure up to date. The modern geodetic infrastructure, however not the levelling networks, are based on GNSS techniques. The use of GNSS has widely been implemented, sometimes with the motive that "with Network-RTK (or VRS) there is no more need of marks on the ground, we will have all coordinates in the air". Sometimes this declaration entices the management into reducing funds for maintenance. We do not believe in this academic fiction. It is not possible to guarantee sustainable reference frames without marks in the ground. In Sweden, where we have a nation-wide CORS network, SWEPOS™, operating since many years and supporting the Swedish ETRS89-realization, SWEREF 99. We also have a new levelling network, with 50 000 benchmarks, supporting the RH 2000 height system and from the project RIX 95 more or less 10 000 benchmarks with SWEREF 99-coordinates. We have come to the conclusion that it is not necessary to keep all these benchmarks updated. For the active frame (SWEREF 99) we can reduce the maintenance to a few hundred points that will make it possible to keep a check on all future alterations. For the passive frame (RH 2000) we will keep focus mainly on benchmarks on bedrock as well as nodal points in the network. In addition we have to use more resources for data collection and analysis of time series etc. [Paper presented at the FIG Congress 2010, Facing the Challenges - Building the Capacity Sydney, Australia, 11-16 April 2010]

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

Conferences, Events

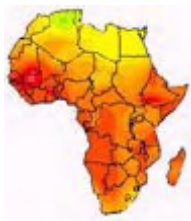
Date	Location	Event
May 2010		
2-8 May 2010	Cape Town, South Africa	32nd ACM/IEEE International Conference on Software Engineering
2-8 May 2010	Cape Town, South Africa	3rd Workshop on Software Development Governance (SDG 2010) In conjunction with ACM/IEEE 32nd International Conference on Software Engineering
3 May 2010	Cape Town, South Africa	SESENA - Workshop on Software Engineering for Sensor Network Applications In conjunction with ACM/IEEE 32nd International Conference on Software Engineering
3-7 May 2010	Paris, France	5th Global Conference on Oceans, Coasts, and Islands Contact: Miriam C. Balgos, mbalgos@udel.edu .
4 May 2010	Nairobi, Kenya	Challenge Program for Climate Change, Agriculture and Food Security (CAAFS) Launch Conference Securing food security in the face of climate change
10-11 May 2010 *NEW*	UNHQ, New York, NY, USA	2nd Preparatory Meeting of the Proposed United Nations Committee on Global Geographic Information Management
10-13 May 2010	Johannesburg, South Africa	Strengthening Africa's Road Network Links - Africa Roads 2010
10-13 May 2010	Edinburgh, UK	Earth System Science: Climate, Global Change and People Open Science Conference
10-21 May 2010	Nairobi, Kenya	4th Meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 14)



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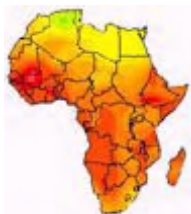
11-14 May 2010	Guimarães, Portugal	13th AGILE Conference on Geographic Information Science
11-12 May, 2010 *NEW*	ESA / ESTEC in Noordwijk	New capabilities for Unmanned Aerial Systems (UAS) Contact: Thomas Bouvet, at thomas.bouvet@esa.int
12-15 May, 2010 *NEW*	Buffalo, New York	Representing Reality: Imagery in the Cognitive, Social and Natural Sciences
17-21 May 2010	Accra, Ghana	4th African International Conference on Open Source and the Digital Commons
19-21 May 2010	Nairobi, Kenya	Ecological Society for Eastern Africa (ESEA) Climate Change Conference
23 May 2010	Cape Town, South Africa	IEEE 1st International Workshop on Social Networks
24-26 May 2010	Rome, Italy	4th Global Workshop on Digital Soil Mapping Theme: From Digital Soil Mapping to Digital Soil Assessment: identifying key gaps from fields to continents.
24-26 May 2010	Libreville, Gabon	2nd International Conference of Eau-Afrique (Africa-Water): Water and Sustainable development in Africa - Water and Rural Modernization: Case of Bateva in Gabon
26-28 May, 2010 *NEW*	Hong Kong	14th International Symposium on Spatial Data Handling - Theory, modeling and concepts in Geospatial Information Science
26 - 28 May, 2010 *NEW*	Hong Kong	The 14th International Symposium on Spatial Data Handling
26-28 May 2010	Lusaka, Zambia	5th International Conference on ICT for Development, Education and Training (eLearning Africa 2010)
June 2010		
2 June 2010	Enschede, The Netherlands	International Society for Photogrammetry and Remote Sensing Symposium on Education & Outreach 2010
8-12 June 2010	Nairobi, Kenya	Africa Agriculture GIS Week (AAGW) 2010
2-4 June 2010 *NEW*	Washington D.C. USA	US-Africa Workshop on Expanding the AfricaArray Network to Support Multidisciplinary Science in Africa
12 June 2010	Nairobi, Kenya	WhereCamp Africa 2010
12-14 June 2010	Nessebar, Bulgaria	ISDE 2010 Digital Earth Summit Theme: Digital Earth in the Service of Society: Sharing Information, Building Knowledge. Contact: Temenoujka Bandrova, cartography@abv.bg .
18-20 June, 2010 *NEW*	Peking, China	Geoinformatics 2010 - The 18th International Conference on Geoinformatics , Contact: info@geoinformatics2010.org .
20-25 June, 2010 *NEW*	Bulgaria.	10th International Multidisciplinary Scientific Geo-Conference and Expo – SGEM 2010 (Surveying Geology & mining Ecology Management) , Contact: sgem@sgem.org .
21 - 23 June, 2010 *NEW*	Povoa de Varzim, Portugal	ICIAR 2010 - 7th International Conference on Image Analysis and Recognition
21-22 June 2010	Nottingham, UK	2nd Open Source GIS UK Conference - OSGIS 2010
21-24 June 2010	Yogyakarta, Indonesia	9th GISDECO Conference Theme: Applying Remote Sensing and GIS in Disaster Management. Contact: sliuzas@itc.nl .
23-25 June 2010 *NEW*	Addis Ababa, Ethiopia	The Second Science With Africa Conference
27-30 June 2010	Vancouver, Canada	GeoWeb 2010
28 June-2 July 2010	Bergen, Norway	Living Planet Symposium



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28 June - 2 July 2010	Edinburgh, Scotland	18th Commonwealth Forestry Conference Theme: Restoring the Commonwealth's Forests: Tackling Climate Change. Contact: cfcc@in-conference.org.uk .
July 2010		
5-7 July 2010	Vienna, Austria	ISPRS TC VII Symposium, "100 Years ISPRS - Advancing Remote Sensing Science"
6-9 July 2010	Salzburg, Austria	Applied Geoinformatics Forum Symposium and Exhibition Salzburg (GI Forum 2009)- Advancing the GI Dialogue
10-13 July 2010	San Diego, CA, USA	ESRI Survey & Engineering GIS Summit
12-16 July 2010	San Diego, CA, USA	2010 ESRI International User Conference
20-23 July 2010	Leicester, U.K.	Accuracy 2010
25-30 July 2010	Honolulu, HI, USA	IEEE International Geoscience & Remote Sensing Symposium "IGARSS 2010" Contact: publicity@igarss2010.org .
26-27 August, 2010 *NEW*	Como, Italy	WebMGS 2010 . 1st International Workshop on Pervasive Web Mapping, Geoprocessing and Services
August 2010		
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
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	Skopje, Republic of 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@programmabureauklimaat.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
October 2010		
12-14 October 2010	Cape Town, South Africa	International Conference on Information and Communication Technology for Development (ICT4D 2010)
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 International CODATA Conference Theme: Scientific Information for Society: Scientific Data and Sustainable Development
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 .



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November 2010		
1-7 November 2010	Hamburg University	3rd worldwide online climate conference CLIMATE 2010/KLIMA 2010 Contact: info@klima2010.net .
8-11 November 2010	Sede Boqer Campus, Israel	3rd International Conference on Drylands, Deserts and Desertification Contact: Dorit Korine, desertification@bgu.ac.il .
19-21 November 2010 *NEW*	Munyonyo, Kampala Uganda	2010 Pilot International Conference on Global Sustainable Development , "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
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 .
December 2010		
2011		
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
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 .
October 2011 *NEW*	Cairo, Egypt	AfricaGIS2011 Conference, "Geospatial Information Science and Technology for Adaptation of Climate Changes and Future of Africa"
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 .
8-12 July 2012	San Diego, California USA	ESRI User Conference

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