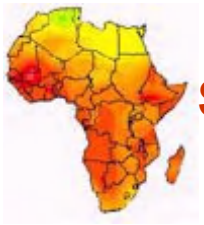

Spatial Data Infrastructure – Africa Newsletter

GSDI
Global Spatial Data Infrastructure

SDI-Africa Newsletter **February 2010** **Vol. 9, No. 2**

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 or sdiafrica@rcmrd.org or gojwang@rcmrd.org

Input to this Issue

Thank you to Kate Lance, NASA/SERVIR-Africa (USA); Hussein Farah, RCMRD (Kenya); Florent Lasry, IGAD/ICPAC TA-TE AMESD (Kenya); Caroline K. Lumosi, Ecological Society for Eastern Africa – ESEA (Kenya); Kathleen Mogelgaard, Population Action International (USA); Gudrun Freese, Earthscan (UK); Aster Agebremariam, UNECA (Ethiopia); Nasser Olwero, World Wildlife Fund (US); Sabine Blaum, United Nations Framework Convention on Climate Change (Germany); Jacqueline Murphy, IDCE - Massachusetts (USA) and Dorothy Amwata, OSS, Tunisia for their contributions to this issue of the newsletter.

SDI News, Links, Papers, Presentations

Call for Papers: GSDI 12 World Conference, 19-22 October 2010, Singapore
GSDI 12 invites presentations covering the full range of practice, development and research experiences that advance the practice and theory of spatial data infrastructure development and spatial enablement of society. Theme: Realizing Spatially Enabled Societies. The Call for Papers is listed below and may be found also with all web links active at http://www.gsdi.org/gsdi12/papers.html. GSDI 12 will support three primary forms of publication:

1. Normal conference proceedings with abstracts and full articles (non-refereed and refereed),;
2. Pre-conference published book of fully refereed articles, and

3. Post-conference special edition of the International Journal of Spatial Data Infrastructures Research (IJSDIR) with full articles selected from the proceedings and then fully refereed and revised after the conference.

Presentations will be organized in tracks, but authors are invited as well to submit presentations that fall outside of these topical tracks. The tracks identified by number are as follows:

- Experiences in developing spatial data infrastructure initiatives, projects and programs at the following levels: local and regional, national, multi-national, and global;
- Applications arising from the use of improved spatial data infrastructure or spatially enabling citizens or government including applications related to: poverty alleviation; environmental sustainability and energy; e-government; e-commerce; disaster prevention, management and response; health, safety or public order; transportation; administering or managing property (cadastre), land uses, housing, or spatial planning; managing natural resources such as oceans, forests, and rivers; consumer products (e.g. navigation and gaming); other applications;
- Geographic data issues
- Geographic metadata, maintenance and updating issues and initiatives
- Registries, portals, clearinghouses and archives
- Web-based services for discovery, access, processing and product generation
- Standards and interoperability issues
- Legal, ethics, policy, and economic issues
- Institutional, administrative, and management issues
- Emerging participatory, inclusive and collaborative approaches in developing content and infrastructure (e.g. participatory GIS, geoweb tools, data commons, collaborative commercial and open source software production approaches, volunteered geographic information, global geo efforts)
- Capacity building and education, Knowledge Exchange (e.g. among research, development, education and professional practice communities as well as throughout society)
- Basic and applied research methods and results

We highly encourage submission through the web. However, if your paper is too large for the system, deliver it to astevens@gsdi.org with an email subject line of GSDI-12 Refereed Article Submission by <your last name>. Abstract deadline: 1 April 2010, Book Chapter Submission Deadline: 15 March 2010, Refereed Journal Special Issue deadline: selected from conference full paper submissions.

ESPI and Eurisy join in project on European-African partnership

ESPI and Eurisy have launched a joint two-year project on how to foster European-African partnership on satellite applications for sustainable development in Africa. Numerous activities will be conducted by the two organizations in 2010 and 2011 with the goal of optimizing the exploitation of space applications on the African continent. Africa is in need for effective instruments supporting its efforts to achieve sustainable development. Satellite applications can be of tremendous benefit for achieving this goal. Europe is already providing assistance to Africa in this field but the efforts - through Eumetsat, ESA, national institutions or via the UN Space Applications Programme - have so far lacked a comprehensive strategy, a coherent coordination and a thorough consultation between the European and the African stakeholders. Especially on an operational level exchanges among user communities have to be encouraged. Calibration between user needs and service provider capabilities has to be improved and service provider requirements have to be met by space infrastructure.

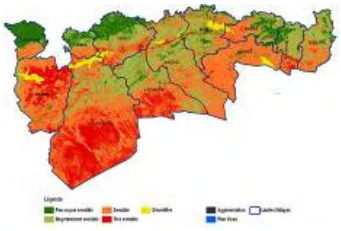
The two-year project “Fostering a European-African Partnership for Sustainable Development in Africa through Satellite Applications” (European-African Partnership) is a joint initiative by ESPI and Eurisy, the European think tank on space policy and the European association facilitating the use of satellite services. Numerous activities will tackle the issues of strategy, coordination, cooperation and consultation in order to create a new impetus for European-African partnership in this field. The process will involve all relevant stakeholders and address in clear and precise ways the various levels: from the policy-makers to the final users. The first phase will investigate the policy aspects; the second phase will feature user consultations and stimulate cooperation among actors on the operational level.

5th UN-SPIDER regional support office established in Algeria

The Third African Leadership Conference on Space Science and Technology for Sustainable Development opened on 7 December 2009 in Algiers with a signing ceremony between the Algerian Space Agency and the United Nations Office for Outer Space Affairs to establish a UN-SPIDER Regional Support Office (RSO).

The head of UNOOSA's delegation, Niklas Hedman told conference participants that "a large number of global and regional mechanisms and initiatives exist to support the Member States in implementing the use of space tools and solutions". With regard to UN-SPIDER's work in forming a network of RSOs in Africa, he noted that "UN-SPIDER already has a productive working relationship with the Algerian Space Agency", the most recent example of which was the provision of expert services by the Agency for a UN-SPIDER Technical Advisory Mission to Burkina Faso. UN-SPIDER is looking forward to deepening its relationships with the Algerian Space Agency based on this new agreement. See also www.unis.unvienna.org and http://www.asal-dz.org for more information.

Finalisation de la carte nationale de sensibilité à la désertification par l'outil spatial

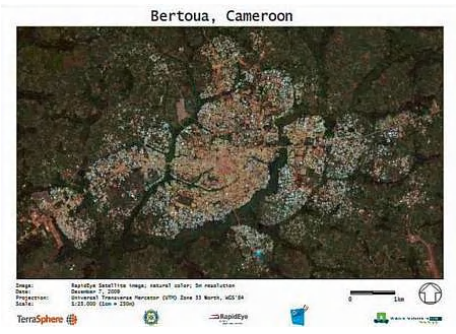


Dans le cadre de la collaboration entre l'Agence Spatiale Algérienne (ASAL) et le Ministère de l'Agriculture et du Développement Rural (MADR), une étude portant sur la réalisation de la carte nationale de sensibilité à la désertification par l'utilisation des données satellitaires et les systèmes d'informations géographiques à été élaborée par le Centre des Techniques Spatiales d'Arzew (CTS/ASAL), en partenariat avec la Direction Générale des Forêts
Cette carte nationale de sensibilité à la désertification a été présentée le 10 janvier 2010 lors d'une journée d'étude présidée par le Ministre de l'Agriculture et du Développement Rural en présence des responsables de l'ASAL, de la DGF et des experts nationaux concernés par la problématique de la désertification.
La zone d'étude s'étalant sur 27 millions 435 mille hectares a concerné les douze (12) wilayas steppiques suivantes: Naama, Tlemcen, El Bayadh, Saida, Tiaret, Laghouat, Djelfa, M'sila, Batna, Biskra, Khenchela, Tébessa. L'étude s'est concrétisée par une cartographie au 1/200.000ème sur l'ensemble des 12 wilayas steppiques, selon le niveau de sensibilité à la désertification, et s'appuyant sur l'imagerie satellitaire et les systèmes d'information géographiques. Elle constitue un outil d'aide à la décision pour la mise en œuvre d'un plan d'action de lutte contre la désertification pour le programme quinquennal 2010 - 2014.
La méthodologie adoptée conjointement entre le CTS et la DGF s'appuie sur :

- les données images satellitaires
- les données climatiques
- la réalisation des cartes de base
  - la carte d'occupation du sol
  - la carte morpho-pédologique
  - la carte d'ensablement
- les missions de terrain
- le modèle de croisement des cartes thématiques
- la réalisation de la carte de synthèse : carte nationale de sensibilité à la désertification

Il est à rappeler qu'une carte similaire élaborée en 1996 par le CTS a concerné près de 20 millions d'hectares couvrant les neuf (09) wilayas steppiques suivantes: Naama , El Bayadh
Laghouat, Djelfa, M'sila, Batna, Biskra, Khenchela, Tébessa. Les cartes par wilaya ont été remises à l'ensemble des conservations forestières concernées, avec les notices explicatives correspondantes. Elles seront confrontées au terrain et validées (par commune).

RapidEye imagery for sanitation project in Cameroon



The Dutch company AeroVision joined forces with satellite value-adding company TerraSphere, research institute Alterra and satellite operator RapidEye to produce a detailed map of the city of Bertoua, Cameroon. The map is based on recent high-resolution RapidEye imagery taken in December 2009 and has a wealth of details previously unmapped for this region. The map has been donated to Rotaryclub Rhenen-Veenendaal who requested the map for a sanitation project in this city.
Bertoua's 200,000 inhabitants had limited access to clean drinking water because of poor logistics. In the past 10 years 46 new pumps and wells have been installed providing clean and safe drinking water. Now Rotary contributes to the management and maintenance in the community, enhancing local competences for responsibility and resilience. "We are very lucky that RapidEye has recorded imagery for

this region" - says initiator Tamme van der Wal from AeroVision. "The available maps so far were either of small scale or hand drawn. This map clearly shows the extent of the city, the infrastructure and the tigerish gully pattern". The 5 meter resolution of the RapidEye imagery reveals buildings, erosion patterns, rivers, streets, and agricultural fields. The map will be used to locate the drinking water sites as basis for per-site maintenance plans including environmental protection. This map is an initiative of AeroVision, spatial information management consultants. Imagery was kindly made available by RapidEye. Map production was carried out by TerraSphere Imaging & GIS. Reproduction was done by the Centre for Geo-Information of Alterra. The Information can be requested at tamme.vanderwal@aerovision.nl.

Number of GIS users growing rapidly in Ethiopia

The Geographic Information Systems (GIS) has gained tremendous popularity in Ethiopia by attracting a great number of governmental institutions, the private sector, institutions of learning and non-governmental organizations, it was learnt. In connection with the 4th ESRI Eastern Africa User Conference, which was held between 24-25 September, 2009, the organizers of the event said that in this information age GIS allows countries to visualize, analyze and understand vast arrays of geospatial data in its real world context by using maps and related tools that enable them to extract meaningful information from such ever-increasing silos of data. The GIS technology has become an essential tool for urban land administration, for land use studies and planning, for transport and other infrastructure planning and management, for health coverage and disease control, for education and for a variety of other fields and disciplines.

Mekonnen Manyazewal, Minister of State in the Ministry of Finance and Economic Development (MoFED) said that it is no surprise that many scientists, researchers, policymakers and business managers have turned to GIS to help them in their daily planning and decision-making activities. “We believe it will play a pivotal role in accelerating our country’s development.” The role of the government in the collection, storage, management and dissemination of geospatial data that can be used for decision-making bodies, public or private, cannot be disputed. In this respect, the Ethiopian Mapping Agency, being the foremost agency for the government in this field, has been an early adopter of GIS and ESRI products in the country. “Furthermore, Ethiopia has established a vibrant GIS market with a variety of stakeholders, private sector companies offering a variety of GIS products and services, education institutions teaching GIS in their curricula, civic organizations using GIS for humanitarian relief and other efforts, and a wide array of government institutions acting as data providers, custodians and users of GIS.”

Ethiopia already has an umbrella association with the GIS Society of Ethiopia, contributing to the enhancement of professional standards in the industry, therefore, it is the government’s policy to encourage the dissemination of these types of technologies as well as actively support those professionals and organizations. The conference was organized by UNECA, ESRI East Africa and GISSE. Some 200 participants from 18 countries, including Ethiopia had taken part in the conference.

EMA to undertake 3rd Edition National Atlas of Ethiopia

The Ethiopian Mapping Agency (EMA), as part of its five year strategic plan, is preparing to undertake the 3rd edition National Atlas of Ethiopia Project. The Ethiopian Mapping Agency (EMA) has published that the Project will be started at the beginning of the next (2009/2010) Ethiopian fiscal year due to commence on July 8, 2009, and is expected to be completed within two years and is estimated to cost about Birr 3,000,000.00 (Three million Birr). There are two editions of the National Atlas of Ethiopia to date: The first edition was published in 1981 in black and white format, while the second edition was in coloured format and published in 1988. Both editions of the national atlas were prepared using conventional (analogue) methods.

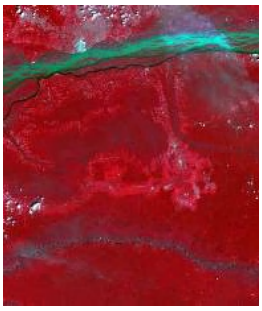
The demand for updated and easily accessed geo-spatial data has significantly increased in Ethiopia following the conducive investment environment and accelerated development of the past five consecutive years. Among the most sought-after geo-information products of EMA, the demand for an atlas of Ethiopia is exceptionally high. However, EMA is currently unable to avail this much sought-after product to its customers. The unavailability of a National Atlas has been an embarrassing situation for EMA as customers regularly complain and regard the situation as unacceptable. Thus, the production of a new revised edition of the National Atlas of Ethiopia has become an urgent task of EMA.

As indicated, the last (2nd Edition) National Atlas of Ethiopia was produced more than twenty years ago. During this span of time the Politico-administrative, Socio-economic and the Physical/environmental landscape of the country has changed significantly and this edition is to a large extent outdated. Furthermore, this outdated edition is out of print and hence out of circulation. Thus, the main objective of the 3rd Edition National Atlas Project is to fill these gaps, and to avail an up-dated and easily accessible National

Atlas of Ethiopia. The production of a digital atlas of the country will enable EMA to disseminate the contents of the Atlas in the World Wide Web (www) which can serve as a geo-spatial data delivery, visualization and explorationtool within the set up of the Ethiopian National Spatial Data Infrastructure (ENSDI) that EMA is hoping to establish in the near future. The benefits of the 3rd Edition can be summarized as follows:

1. To augment knowledge about the country both locally and internationally and enhance the image.
2. To provide up-to-date information on natural resources, environment, population, healthcare, education and investment opportunities for researchers, development planners, decision makers, and investors.
3. To form the basis for the establishment of the Ethiopian National Spatial Data Infrastructure (ENSDI) that will serve as a tool for environmental and natural resource management.

Eyes in space map changing Congo rainforests



In partnership with the British National Space Centre (BNSC) and the other DMC member nations (Algeria, China, Nigeria, Turkey and Spain), DMCii works with the International Charter: 'Space and Major Disasters' to provide free satellite imagery for humanitarian use in the event of major international disasters such as tsunami, hurricanes, fires and flooding.

DMCii is using satellites to acquire new images of the Congo rainforests from space, validating a system that can map the vast Congo Basin every year to measure changes in its forest cover. If adopted, the new system will provide more accurate and up to date information for forest management, policy making and programmes such as the UN's Reducing Emissions from Deforestation and Forest Degradation (REDD+) throughout the region. Spanning 2 million square kilometres, the forests of the Congo Basin are the second largest area of dense tropical forest in the world, rivaled only by the Amazon rainforests. However, little is yet known about the rate and location of the degradation of the forests of the Congo Basin, or their role in the Earth's carbon cycle. Earth observation from space is the only way to effectively and efficiently manage such vast landscapes and to provide independent, regular and detailed information about changes in forest cover.

Until recently the resolution of satellite images was too coarse to provide effective local forest management and the data could not be provided in a timely manner, but DMCii now has the satellites, experience and software systems to do just that. Dave Hodgson, Managing Director, DMCii explains: "Our experience monitoring the Amazon rainforest and sub-Saharan Africa, combined with recently extended imaging systems, means that we could rapidly acquire high resolution cloud-free images of the Congo Basin to help the world better understand the location and scale of deforestation." DMCii uses a group of satellites called the Disaster Monitoring Constellation (DMC) to provide images of any part of the world every day. It is unique because each satellite is independently owned and controlled by a separate nation which includes African nations, but the satellites are coordinated by DMCii making it possible to image a specific place every day.

Uganda wetland spatial analysis aims to mitigate poverty

In May 2009, the World Resources Institute produced a report titled Mapping a Better Future: How Spatial Analysis Can Benefit Wetlands and Reduce Poverty in Uganda. It was developed in collaboration with Uganda's Wetlands Management Department, the Uganda Bureau of Statistics, and the International Livestock Research Institute. Through the use of maps, the report aimed to manage wetlands for the benefit of all, but also to potentially reduce poverty through this better management of the country's wetlands. *Directions Magazine* asked Norbert Henninger, the report's co-author, to explain the challenges of data collection and social change, and discuss the future of the project.

Uganda has invested in land cover maps and in georeferenced inventory data to characterize its wetlands. Mapping a Better Future relied on both sources:

- A national land cover map that shows the location and extent of wetlands. Uganda's National Forest Authority (NFA) produced this 1996 national map using SPOT satellite data. In 2003, NFA, in collaboration with the Food and Agriculture Organization of the United Nations (FAO), released the Multipurpose Landcover database (Africover), which also includes wetlands information (derived from LANDSAT imagery).

- The second source, the National Wetlands Information System, is maintained by the Wetlands Management Department. The system contains detailed information on different wetlands uses, the level of use, and the impact of these uses on wetlands. The data came from a standardized inventory of wetlands carried out for approximately 5,000 wetland sample points between 1997 and 2001. For each of the sample points, field teams inventoried 37 different wetland products that were aggregated to 13 different main uses.

The field teams could not visit most of Uganda's northern districts because of security and instability issues - hence the lack of data in some of our maps. Data for about ten districts in eastern and central Uganda were collected but not entered in the central database in Kampala (although some of this information was useful for district level awareness raising and planning).

The lack of long-term funding for this information system from Uganda's regular government budget is one major reason for these data gaps - most of the funds to build the system were provided from development cooperation partners. Mapping a Better Future demonstrates the usefulness of the existing wetland data but also highlights the limitations in data coverage. Partnering the Wetlands Management Department with the Uganda Bureau of Statistics (the author of the poverty maps) created an opportunity to link some of the more marginal environmental data collection efforts with Uganda's National Statistical System, a much better funded effort that regularly supplies demographic, socio-economic and other data.

Many African countries have produced land cover maps that include specific classes showing permanently or temporarily flooded areas. Colleagues from the Uganda Wetlands Management Department in Uganda have mentioned that they are aware of efforts to systematically map the level of biodiversity for each major wetland system. But they have not heard of any efforts that systematically inventory so many different uses and products for a national system.

National University of Rwanda (NUR) to take over naming of Kigali roads

The National University of Rwanda's Centre of Geographic Information Systems has taken over the project to name Kigali City roads. Initially, a Senegalese company, ECU Rwanda, had been contracted by Kigali City Council to take on the project that was launched during the celebrations to mark 100 years of Kigali's existence.The Vice Mayor in charge of Finance and Economic Development, Alphonse Nizeyimana, said that the company breached the contract by failing to finish the work on time. "The company was supposed to have finished the work in June last year," Nizeyimana said. "The project is therefore going to be given to the GIS department of The National University of Rwanda to finish the work and to digitalise the project." The digitalization of the roads and streets will make the use of Global Positioning System (GPS) technology possible.

Zambia requested to include Transport, Meteorological Component in New Disaster Bill

The Communications and Transport Permanent Secretary Dominic Sichinga has said that there is need to enshrine the transport and meteorological component in the proposed Disaster Management Bill. Making a presentation before the joint parliamentary committee on Energy, Environment and Tourism and Health, Community Development and Social Welfare, Mr Sichinga said that as much as the bill was reasonably framed, there was need to include the aspect of meteorology as well as transport. "As a ministry we feel that we are adequately represented in this bill at all levels. We submit that there should be establishment of transport and metrological aspect. Transport is important when there is a disaster. The mention of transport in this bill is cardinal," Mr Sichinga said.

He told the Chilanga Member of Parliament Ng'andu Magande (MMD) chaired committee that the meteorological department was important in disaster alerting although he bemoaned the obsolete equipment currently used by the department. Despite the obsolete equipment, he said that information by the department was accurate although he admitted that occasionally, there were some levels of inaccuracy. Mr. Sichinga said this when he responded to concerns raised by Monze MP Jack Mwiimbu (UPND) who said that Zambians were mainly upset with the information given by the meteorological department because often, it was inaccurate. He agreed that there was need for the bill to emphasise on preventive measures saying preparedness was the best remedy for natural calamities.

Mapping for 2010 Census in Zambia

Zambia is scheduled to conduct its next Census of Population and Housing in 2010. Before each census is undertaken, it is a United Nations requirement that a complete mapping exercise is undertaken to ensure complete coverage of the entire population. Census mapping involves updating the current national

administrative boundaries to create unique statistical areas of equal population size for data collection. The statistical areas form the sampling frame for all statistical sample surveys and census enumeration, including the Zambia Demographic and Health Survey (ZDHS), socialeconomic household surveys and other inter-censal population surveys after 2010. The Census mapping strategy involves the use of GIS with a combination of GPS use and satellite imagery. The census mapping exercise started in November 2007 and was expected to be completed by December 2009. [Source: SERVIR-Africa community news]

South Africa hits 5 million Internet users

The number of South Africans to have access to the Internet has hit the five million mark. The local Internet penetration has increased to 10% according to recent research conducted by local analyst house World Wide Worx, in conjunction with Cisco. Managing Director Arthur Goldstuck of research lead and World Wide Worx told ITWeb that this figure is a significant milestone in the development of the Internet and communication in the country. Over the last year, there has been acceleration in penetration, showing a 15% increase in the number of users with access to the Internet, from 4.6 million to 5.3 million users. “This will continue to grow in 2010, and should reach the six million mark by the end of the year,” he adds.

The penetration is calculated by the number of individuals having access to the Internet – whether it is through work or connecting from own home Internet providers. There has also been a shift in the socioeconomic status of users getting their hands on access to the Internet. “The higher economic positions, between LSM 8 to 10, are almost saturated, and the new figures show the middle classes are now taking up Internet services,” he noted. However, there is still work to be done at the grassroots level. “People in the lower LSMs still don't know what the Internet is.” Despite one of the world's highest level of mobile penetration, most South Africans are still not using phones as a method of accessing the Internet.

SA's previously slow growth in Internet penetration has largely been due to extremely high costs of access, limiting growth to the wealthy. New developments in local Internet technologies have had a hand in the rapid increase in Internet take-up in SA. “The Seacom undersea cable has had a dramatic indirect affect on the pricing of Internet access” he noted. With local operators also laying fibre, there is likely to be another growth spurt. “In the coming year, operators will begin to leverage the combination of new undersea cable capacity and new fibre-optic networks to supply corporate clients and resellers with bigger, faster and more flexible capacity”. World Wide Worx will release the final Internet Access in SA 2010 report in March. [Source: ITWeb]

Complete free and open map of Kibera slum in Nairobi, Kenya

Kibera in Nairobi, Kenya, widely known as Africa's largest slum, remains a blank spot on the map. Without basic knowledge of the geography and resources of Kibera it is impossible to have an informed discussion on how to improve the lives of residents. This November, young Kiberans created the first public digital map of their own community.

Initially, twelve young residents of Kibera were trained on current mapping techniques during a two-day workshop. Also, individuals from the growing Nairobi technology scene helped train and network with the larger community. The group then mapped all of Kibera over a two-week period in mid-November last year and shared the results through OpenStreetMap, joining a growing global community of tech-savvy grassroots mapmakers. See also: Map Kibera and Mapping an African slum. [Source: SERVIR-Africa community news]

Agricultural advice by SMS in Kenya

Many farmers save seed from one harvest for the next season planting. But, for those who can afford it, commercially-sold seed, such as hybrid varieties, can be more productive. However, with so many types of seed on the market, which should farmers choose? In the past, local extension officers were able to recommend suitable varieties for different locations. Those kinds of advisors are thin on the ground. So now, the Kenya Plant Health Inspectorate Service, known as Kephis, http://www.kephis.org/ , is trying a new way to give maize farmers the information they need. Farmers who want to plant maize can send an SMS text message to a database created by Kephis, and get an automatic response about the best varieties for their area. Winnie Onyimbo finds out more by speaking to a farmer, Arthur Irunga, and first to Nassir Rajab, who

works for Kephis. She begins by asking why they had decided to set up the system. [Source: SERVIR-Africa community news]

Questionnaire on usage of ENDELEO website & data

The ENDELEO project was initiated to create easy access to satellite data indicating the status of the Kenyan ecosystems. For this purpose two services are set up: the web based monitoring tool (http://endeleo.vgt.vito.be), to visualize and analyze the updated images with a few mouse clicks, and the data distribution system, to enable download of the full images for more close examination (only accessible for Kenyan users). In order to improve the services of the ENDELEO project we rely primarily on user input. It would be very interesting for us to get your feedback on the usage of the ENDELEO monitoring website and the available data. Fill in this short **questionnaire** and send to Flore.Devriendt@UGent.be. No deadline given.

Udzungwa GIS Database established in Tanzania

The Udzungwa GIS database is an open access resource which has been established as a collaboration of Nick Mc William and Trevor Jones, Anglia Ruskin University (Cambridge, UK) with the Udzungwa Ecological Monitoring Centre. The Udzungwa GIS database is maintained at the UEMC, where a master copy is installed on a dedicated desk-top PC at UEMC office.
The Udzungwa GIS database contributes to one of the key goals of the UEMC: the facilitation of ecological monitoring and research activities in and around the Udzungwa Mountains National Park. The database is designed (a) as a tool to aid research and conservation work and (b) as an on-going facility to be developed in a participatory way. It is available to all users in the spirit of open scientific and management collaborations. Download the guidelines (word format) to accessing, using, and contributing to the database. [Source: SERVIR-Africa community news]

SALB Project: State of progress for the African Node

The Second Administrative Level Boundaries (SALB) is a UN project launched in 2001 in the context of the United Nations Geographic Information Working Group (UNGIWG). The objective of this project is to provide the international community with a working platform for the collection, management, analysis, visualization and sharing of sub-national data down to the 2nd sub-national level. The December edition of the SALB newsletter reports on the state of progress for the countries covered by the African node. Three maps are included to represent the state of progress in regards to the NMA contact information, historic changes and GIS format maps. The newsletter also identifies examples of countries in Africa for which the SALB project still is missing a full map (with number of administration boundary units in brackets):

- Angola (163 units as of June 2008)
- Central African Republic (78 units as of January 2000)
- Chad (108 units as of August 2002)
- Comoros (14 units as of July 2005)
- Congo (93 units as of April 2009)
- Ethiopia (81 units as of January 2000)
- Kenya 71 units (January 2005)
- Lesotho (number of units unknown)
- Mauritius (131 units as of April 2005)
- Senegal (34 units as of February 2005)
- Seychelles (26 units as July 2007)
- Uganda (168 units as of June 2005)

Important contribution to SALB from ESRI in 2010: ESRI will provide financial support to the SALB project over the coming year to allow for the completion of the dataset. In addition, eligible NMAs that would contribute their validated map to the project in 2010 will, if they request it, receive one ArcEditor license and two ESRI-authored Virtual Campus course registrations for free. This offer is only valid in 2010, and the SALB project encourages the NMAs whoich would like to take advantage to contact SALB@un.org and see

their eligibility. The SALB project will work with ESRI to establish a global map service on ArcGIS Online to access SALB data for non-commercial use through this platform. [Source: SERVIR-Africa community news]

Nomination of Experts: Coordinating Lead Authors, Lead Authors, or Review Editors for the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC)

Governments are invited to nominate experts for consideration as Coordinating Lead Authors, Lead Authors, or Review Editors for the Fifth Assessment Report (AR5) of the Intergovernmental Panel on Climate Change (IPCC). At its 28th Session (Budapest, Hungary, 9-10 April 2008) the Panel agreed to continue to prepare comprehensive assessment reports and to maintain the existing Working Group structure under which:

1. Working Group I assesses the scientific aspects of the climate system and climate change;
2. Working Group II assesses the scientific, technical, environmental, economic and social aspects of the vulnerability (sensitivity and adaptability) to climate change of, and the negative and positive consequences (impacts) for ecological systems, socio-economic sectors and human health, with an emphasis on regional sectoral and cross-sectoral issues; consistent with recent considerations it will also focus on the adaptation needs, options, opportunities, and constraints to reduce current and future risks;
3. Working Group III assesses the scientific, technical, environmental, economic and social aspects of the mitigation of climate change.

At its 29th Session (31 August - 4 September 2008, Geneva) the Panel decided to carry out a Fifth Assessment Report (AR5) to be finalized in 2014. The outlines of the Working Group contributions to the AR5 were developed after a comprehensive scoping process involving the scientific community and governments and were approved in Plenary in October 2009. The Panel at its 31st Session in October 2009 decided also that contribution of the Working Group I will be completed in September 2013, Working Group II in March 2014, and Working Group III in April 2014 and the Synthesis Report in September 2014. The outline of the Synthesis Report will be developed over the course of 2010. New features include:

- A new set of scenarios for analysis across Working Group contributions;
- Dedicated chapters on oceans, sea level change, carbon cycle and climate phenomena such as monsoon and El Niño;
- Much greater regional detail on climate change impacts, adaptation and mitigation interactions; inter- and intra-regional impacts; and a multi-sector synthesis;
- Integrated risk and uncertainty assessment of climate change response policies (both adaptation and mitigation).

A detailed description of the IPCC writing and review process and respective roles and responsibilities is contained in the "Procedures for the Preparation, Review, Acceptance, Adoption, Approval and Publication of IPCC Reports". Nominations are made by completing the appropriate forms in the online nomination tools. A copy of the letter has been sent to the Ministry for Foreign Affairs, IPCC Contact Point(s), the Permanent Representative with WMO and Focal Point(s) of UNEP of your country for information. No deadline given for the nominations.

AMESD_IGAD and DevCoCast to organize a joint Geonetcast and e-station training, 8-12 February 2010, Nairobi, Kenya (See French version)

The IGAD-AMESD Thema at ICPAC and the DevCoCast projects are organizing, in collaboration the EC-JRC, the ITC and the RCMRD, a 5 days training workshop entitled: "DevCoCast/AMESD regional land training workshop in Africa: a focus on the IGAD Thema operational services". This workshop will be held in Nairobi from the 8-12, February 2010, and will gather more than 30 participants from the IGAD region. The primary objective of this training is to explore the potential of the data flow received though the GEONETCast and e-stations, in particular SPOT-VEGETATION and Meteosat Second Generation in view of the development of the AMESD-IGAD services. Software routines for archiving and processing the data will be demonstrated and applied, with a focus on the IGAD region user community needs for the future software development. For further information, contact Florent Lasry, IGAD/ICPAC TA-TE AMESD Technical Assistance, Nairobi - Kenya, Tel: +254 20 351 44 26 (ext. 13), Cell: +254 (0) 719 304 304 or +254 (0) 736 104 104, Fax : +254 20 387 83 43, email : florent.lasry@amesd.org. Skype: florent.lasry. See also web: www.amesd.org and www.icpac.net.

Call for papers: ESEA Climate Change Conference, 19th -21st May, 2010, Nairobi, Kenya

The Ecological Society for Eastern Africa (ESEA) will host its 3rd Regional Scientific Conference, from the 19th -21st May, 2010 at Kenyatta University, Nairobi, Kenya. The theme for the Conference is: "Climate

Change and Natural Resource use in Eastern Africa: Impacts, adaptations and mitigation." The Ecological Society for Eastern Africa (ESEA) is not-for-profit, networking organization, bringing together individuals and institutions participating in ecological research and applications to development in Eastern Africa. Member countries are: Ethiopia, Uganda, Kenya and Tanzania with the secretariat based in Nairobi, Kenya.

The conference will address a wide range of climate change topics with the aim of increasing awareness of vulnerabilities, impacts and targeted adaptation measures that can be applied in the region with the aim of distilling knowledge and raising awareness on:

- Impacts on natural and human systems
- Best practices of adapting to the impacts
- Mitigation strategies
- User friendly methods of communicating climate change issues in eastern Africa.

The conference is open to all professionals who are involved with science and practice of ecology within the eastern African region. Students are encouraged to use this forum to share their work with other scientists in the region. Students should submit an abstract (electronic and in compatible MS Word version) to the ESEA via the normal submission procedures established by the Conference organizers. Abstract title should begin with "Student Competition". Abstract deadline: 15 March 2010. Address any inquiry on this conference to conference@ecsea.org. [Source: SERVIR-Africa community news]

Call for papers: 3rd worldwide online climate conference CLIMATE 2010/KLIMA 2010, 1-7 November 2010, Hamburg University

The Hamburg University of Applied Sciences is pleased to inform that the call for papers for the third worldwide online climate conference CLIMATE 2010/KLIMA 2010 has just opened. Use this unique opportunity to present and discuss your work with fellow researchers, practitioners, NGOs and the interested public from all around the world.

CLIMATE 2010 is organized in cooperation with UNEP, IPCC, WMO, FAO and world bodies. Building on the success of the previous online conferences, this year's interactive, free of charge online vent will specifically focus on Climate Change and the sustainable management of water resources. Researchers from around the globe, in particular researchers from developing countries should submit their scientific abstracts online until 31 March 2010 at the latest to the unique CO2-friendly virtual conference, relating to one of the four following categories:

- Geochemical and physical impacts of climate change
- Socio-economic aspects of Climate Change (relating to water supply and use)
- Climate Change, policy-making and sustainable water use
- Projects on Climate Change and sustainable water use (education and awareness-raising initiatives)

All submissions will be full papers to be subject to peer review. Besides online publication throughout the conference week from 1-7 November 2010, the best English papers will be considered for publication in the "International Journal of Climate Change Studies and Management" and/or the book publication "Climate Change and the Sustainable Management of Water Resources" as part of the Climate Change Management Series (Springer). Additional opportunity exists to promote own climate-related projects and publications - input for the CLIMATE 2010 climate library and project database. Apply with studies/reports for incorporation in the CLIMATE 2010 website. Contact: info@klima2010.net.

Practical SDI implementation materials from within and outside of Africa

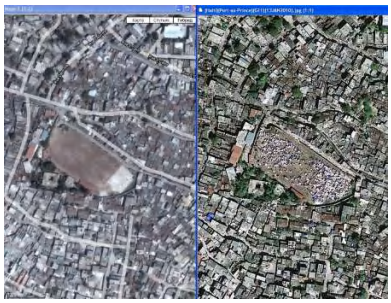
European agencies use OGC Standards in Meteorology

Meteo-France, the UK Met Office, and the European Centre for Medium-Range Weather Forecasts (ECMWF) recently held the 2nd Workshop on: The Use of GIS/OGC Standards in Meteorology at the Conference International Centre at Meteo-France, Toulouse, France, from 23-25 November 2009, See details. Workshop participants reviewed applications of OGC and other standard Web services, encodings, and analytical methodologies being used across the meteorology community; discussed the relationship between the World Meteorological Organization (WMO) and OGC; and defined a roadmap for further activities of the OGC Meteorology & Oceanography Domain Working Group. This working group provides an open forum on meteorological and oceanographic systems interoperability and a formal process for developing international consensus standards that may be submitted to the WMO Commission for Basic Systems (CBS) for adoption. David Arctur, Director of Interoperability Programs at OGC said, “This workshop and the successful 2008

workshop hosted by ECMWF and the UK Met Office showed many implementations of the OGC Web Map Service Interface Standard (WMS) for meteorology. Using this standard and others improves the usability of weather information in fields such as aviation, transportation and disaster management. We are looking forward to deepening the already very good relationship that the OGC has with the Meteo and Oceanographic communities in the future."

The OGC is an international consortium of more than 385 companies, government agencies, research organizations, and universities participating in a consensus process to develop publicly available geospatial standards. OGC Standards empower technology developers to make geospatial information and services accessible and useful with any application that needs to be geospatially enabled.

Geospatial community pours effort into Haiti quake



It's amazing how far the geospatial community has come in the quick and largely volunteer effort to respond to large-scale disasters. There are now dedicated sites and corps of crisis mappers that map from afar, and visit the site of the disaster to help relief agencies and governments in their response. Among the activities ongoing or planned are:

- GeoEye imagery from before and after the quake is available on Google Maps and Google Earth
- Digital Globe is offering free access to both pre- and post-earthquake imagery until January 28, 2010 with ImageConnect plug-in for GIS software.
- ESRI has a disaster response and assistant team that's ready to help with software, data, imagery, project services, and technical support
- Google has opened up their Map Maker data for Haiti to the UN for relief work
- Ushahidi, a site started as an African Open-Source Project, has set up open source mapping at Haiti.Ushahidi.com
- The Relief Map Warper, a service of the New York Public Library, provides a means to rectify maps and images against a real map
- Fortius One's GeoCommons has a four-layer map of quake reports
- There's an OpenStreetMap Wiki with links to data, and a call to action to add more details to the map
- The MapAction Emergency Mapping Service has sent a team to Haiti
- The GISCorps is mobilizing

Highly-detailed images of the impacted area have been provided in near real-time by such satellite system Operators as DigitalGlobe (USA), SpotImage (France), ImageSat Int. (Israel), Research Center for Earth Operative Monitoring of the Russian Federal Space Agency. Over the past years, international efforts of the organisation and institutions of different countries have been gathering satellite imagery and distribution of data products. Such a well-coordinated application of new satellite images for monitoring and control allows the organisations, involved in rescue operations to make timely and reasoned decisions. GIS has clearly proven itself as a means to provide some order and assessment in the chaos of major disasters. It's good to see the rapid response of seasoned professionals that can make a difference.

Land Administration Domain Model (LADM) becoming an international standard

FIG submitted in 2008 a proposal to develop an International Standard concerning the Land Administration Domain to the Technical Committee 211 on Geographic Information of the International Organisation for Standardisation (ISO/TC211). The proposal passed vote at ISO TC 211 plenary meeting in Quebec City, Canada in November 2-6, 2009, for forwarding the draft ISO 19152 Land Administration Domain Model as a Draft International Standard (DIS). The DIS is expected to be available in March 2010. The final International Standard is expected in 2011. [Source: SERVIR-Africa community news]

Geospatial modeling environment: a platform designed for rigorous spatial analysis and modeling

"The promise of GIS has always been that it would allow us to obtain better answers to our questions. But this is only possible if we have tools that allow us to perform rigorous quantitative analyses designed for spatial

data. The Geospatial Modeling Environment (GME) is a platform designed to help to facilitate rigorous spatial analysis and modeling". GME provides you with a suite of analysis and modeling tools, ranging from small 'building blocks' that you can use to construct a sophisticated work-flow, to completely self-contained analysis programs. It also uses the extraordinarily powerful open source software R as the statistical engine to drive some of the analysis tools. One of the many strengths of R is that it is open source, completely transparent and well documented: important characteristics for any scientific analytical software.
It has a greater range of analysis and modeling tools, supports batch processing, offers new graphing functionality, automatically records work-flows for future reference, supports geo-databases, and can be called programmatically." Visit the following links for more information and Download.

Dr. Robert Chambers elaborates on Participatory GIS (PGIS) practice

Dr. Robert Chambers from the Institute of Development Studies (IDS), UK, reflects on the intersection of participatory development and Geographic Information Systems (GIS) and on the resulting good and bad practices. In the interview Dr. Chambers calls on practitioners and development agencies to ensure that good practice is put in place to avoid the repetition of the misuse of PRA (i.e. Participatory Rural Appraisal) done in the 80's and 90's.
The interview has been transcribed and translated in many languages by volunteers. Viewers can select preferred subtitle language on the video toolbar.

Community-Based Disaster Risk Reduction (CBDRR) in Divinubo Island, Philippines

1:400-scale Participatory 3D Model (P3DM) of the Municipality of Borongan, Island of Divinubo, Eastern Samar, Philippines (Yr 2007). The model was produced in the context of the Samar Coastal Research for Environment and Development (e-SACRED) project and specifically within the framework of a Community-Based Disaster Risk Reduction (CBDRR) initiative. The model features the collective knowledge of local residents and representatives from the Divinubo People's Organization, the City Government of Borongan, and the University of the Philippines Diliman. Results included Participatory assessment of hazards, vulnerabilities and capacities, establishment of a Community-Based Disaster Risk Reduction (CBDRR) plan and methodological learning.

GIS Tools, Software, Data

Download free Ethiopia maps

Note that maps may not appear on the webpage in their full size and resolution.

- Ethiopia (Political) 1999 (323K) and pdf format (331K)
- Ethiopia (Shaded Relief) 1999 (223K) and pdf format (247K)
- Ethiopia (Shaded Relief) 1990 (317K) and pdf format (221K)
- Ethiopia (Small Map) 2008 (15K)
- Addis Ababa U.S. Dept. of State 1986 (157K)
- Omo River Region Portion of U.S. Army Map Service Series 2201, Sheet 20, 1980, original scale 1:2,000,000 (2.7MB)

Free Downloads

- Download Free Digital Elevation Model(30M) of any where in the world from NASA (Shuttle Radar Topographic Mission SRTM)
- Download free ArcGIS 9x and Arcview 3.2 compatible custom scripts
- GIS software,plug-ins and extensions

Free GIS Tutorial and Resources

- Why Use GIS?
- How GIS is used and how you can use GIS to realize your business objectives.

- ESRI Developer Network (EDN): Learn how to customize your ArcGIS software and extend its basic functionality with free source codes and applications.
- **Free World Regional Maps** - high resolution JPG and PDF downloads
- **Free TOPO and Terrain Maps**
- GIS Maps of Africa
- GIS Maps of Ecosystems
- Environmental GIS Maps
- Historical Maps
- GIS Tutorials

Free Gaia WFS-T evaluation

The Carbon Project has announced a free evaluation of the data production tool for its Gaia Spatial Data Infrastructure (SDI) platform. The new "WFS-T Extender" provides an easy way to contribute geospatial data using Web Feature Service Transactional (WFS-T) services from any system - including ESRI ArcGIS Server, CubeWerx, GeoServer, Intergraph, ERDAS and others.

"The Gaia WFS-T Extender allows geospatial edits and updates using WFS-T and Geography Markup Language (GML) in both online and offline environments - wrapping OGC standards into an easy-to-use application accessible to anyone, including non-GIS users. The app also plugs-and-plays with WFS-T from ESRI, CubeWerx, GeoServer, Intergraph and ERDAS - and we hope it promotes collaborative SDI," said Nuke Goldstein, CTO of The Carbon Project.

The Gaia WFS-T Extender is also part of CarbonCloud Sync - a Cloud or Server-hosted geo-synchronization capability for crowd-sourcing data production and updates over a network of OGC services. The Carbon Project will present the Gaia WFS-T Extenders and the CarbonCloud Sync at the ESRI Federal Users Conference in Washington DC, on February 18. For more information, contact: info@TheCarbonProject.com.

Free data viewers

Free data viewers for a variety of GIS formats. These viewers allow you to display geographic data as well as perform some basic GIS functions.

- **ArcExplorer** - The free GIS application offered by ESRI products. A lighter version of ArcView this application allows basic mapping and spatial querying.
- **ArcReader** - Free, easy-to-use mapping application that allows users to view, explore and print maps.
- **Christine GIS** - Free GIS software allows you viewing and spatial querying vector and raster data, creating and editing tabular data, connect DBMS by ODBC, creating applications by integrated script language.
- **GeoGenesis LE** - GeoGenesis LE users can quickly view single or multi-band satellite and aerial imagery with simple band selection menus, display both natural color and false color and overlay geospatial vector data onto underlying imagery and elevation data. In addition to rapid panning and zooming capability, GeoGenesis© LE provides the facility to convert and save imagery from NITF format to GeoTIFF while maintaining the important registration information such as RPC data forcommercial satellite imagery.
- **Geomatica Freeviewer** - Standalone dataviewer that allows browsing of a variety of vector and raster based data including satellite imagery. You can also access attribute data within this viewer.
- **Geospatial Explorer** - This viewer was especially created for environmental scientists, geologists and engineers.
- **Natural Resources Database** - A GIS-based tool for developing and distributing environmental databases. Data may be output as resource maps, graphs and reports using simple selections or powerful queries. The program supports the import and export of data to and from shapefiles and supports universal (UTM) and other transverse mercator projections. Data may also be imported from Excel files, Access databases and text files.
- **ShapeViewer** - Free tool, which you can use to view ESRI Shapefiles.
- **TatukGIS** - Free GIS Viewer opens most GIS/CAD vector, raster image, and grid file types most ArcView, ArcExplorer, and MapInfo projects. Besides just opening and viewing map files and attribute data, the

Viewer includes a comprehensive visual layer properties control, legend control, attribute data table, features for thematic mapping, spatial and attribute querying, custom labeling, on-map measurements, hyper-linking, pie/bar charts, and much more. Advanced support for coordinate system includes automatic recognition of the coordinate system of each layer and on-the-fly reprojection of vector and raster map layers between nearly 3,000 pre-defined coordinate systems. The user interface is available in 16 language options.

- **TNTAtlas** - Free Geodata viewing tool for Mac OS X and Windows. Geodata files currently supported include shapefiles, DWG, DGN, DXF, JPEG, JP2, TIFF, GeoTIFF, PNG, ECW, and MrSID formats. TNTatlas also has features for querying, measurement, printing, sketching of the displayed geodata.

ESRI launches free "Mapping for everyone" site

Press release from ESRI has announced the launch of "Mapping for Everyone" site:

- Make a Map - The Make a Map feature includes a simple interactive Web map showing seven different U.S. demographic layers. Visitors can zoom in to an area of interest, select a demographic layer, and then embed the map into their own Web pages simply by copying and pasting the automatically generated HTML.
- Web Mapping APIs - Visitors can access or download ArcGIS Web Mapping APIs to make their maps. Web Mapping APIs allow users to develop rich, interactive applications using JavaScript, Flex, and/or Silverlight. The page includes step-by-step instructions for installing the APIs, samples to help visitors get started, free map layers, and a gallery of live user sites where visitors can get ideas from applications other people have built. Web Mapping APIs are free for noncommercial use.
- Virtual Globe Viewer - A third mapping option is ArcGIS Explorer, ESRI's free virtual globe viewer. Using ArcGIS Explorer, users can explore the world in 2D and 3D using both their own data and free available data from the ESRI Web site. In addition to the ArcGIS Explorer download, the virtual globe page gives visitors easy access to map layers that they can add to ArcGIS Explorer, such as topographic maps, shaded relief, and world transportation. Once visitors become familiar with ArcGIS Explorer, they can also visit this page to find free add-ins that extend the software's capabilities.

Mapping for Everyone also includes a Community section where visitors can ask questions and collaborate with others. This section also provides access to ESRI's ArcGIS Explorer and Web Mapping API blogs.

Geospatial Research, Applications, Reference Material

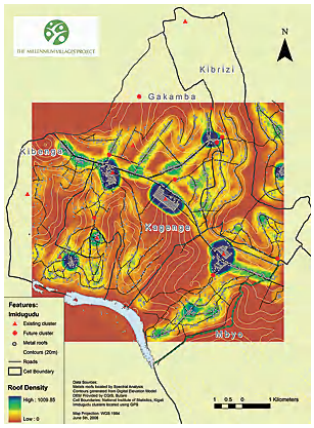
Leveraging property rights in the developing world with Geospatial Technology

According to renowned economist Hernando de Soto, the inability of persons worldwide to gain formal recognition of their real property rights is a major stumbling block to alleviating poverty. This lack of formal legal recognition of property rights is pronounced in situations where rights are considered outside of the statutory legal system - that is, they are based on customary or indigenous forms of land tenure. From a purely economic perspective, this lack of recognition of formal rights to property represents "trapped" capital that could be accessed to stimulate the local financial markets with microfinance loans and possibly mortgages. It also represents the "trapping" of other forms of capital as well such as human, legal and social. As a result, people in poverty often live outside of the formal economy. However, "untapping" this hidden capital requires formal recognition of the property rights of those in poverty. Despite these apparent benefits, access to standard forms of land titling and registration are out of reach for most in poverty. The process itself is usually too expensive, complicated and rife with rent-seeking. Even in those locations where formal land titling is fairly effective—it often does not adjust itself to truly serve those at the bottom of the pyramid.

Former First American President Craig DeRoy formed a new company called Corporate Initiatives Development Group (CIDG) and continued a commitment to the Clinton Global Initiative (CGI) for a pilot project based in Ashaiman, Ghana focusing on improving property rights to those in poverty. A team consisting of International Land Systems (ILS) Inc., Opportunity International, Trimble Navigation, and ESRI put put together a business -driven approach that provides for a sustainable and scalable approach to formalization of land rights in Ghana, utilizing the distribution network of microfinance lenders with an innovative GIS and GPS-based paralegal property rights formalization process to significantly reduce the time

and cost involved in collecting and documenting property rights information. This new model combines geospatial technology and an innovative paralegal registration process to develop a land titling process and GIS-based land records system that automates much of the work involved in collecting property ownership information, creating low-cost and timely property descriptions and surveying of parcels. To most efficiently and responsibly identify and reach the poor in need, the pilot program utilizes the distribution network of a microfinance lender as the trusted broker partner. The program bases its unique approach on a foundation of commercial sustainability and scalability, which has been sorely lacking in other land reform projects that are typically highly subsidized. Download the article, complete with images (1.358Mb PDF).

Improving access to clean water in Sub-Saharan Africa



Clean drinking water is hard to find in Mayange, Rwanda. That's why, traveled to this African region. Using the GIS technology and GPS equipment, a group of university students and two professors from the University of Redlands (U of R) in Redlands, California mapped the area's water sources and collected water use information. Their survey is helping improve access to clean drinking water in the community and in similar communities across sub-Saharan Africa.

The maps are useful in providing local sustainable development programs with accurate locations of where people get their water. For example, the data can be used to identify areas where water sources are contaminated and support decisions about improving water quality, such as how to protect an open pit water source or where to dig a new water source. Ultimately, this field collection and mapping model may be used for mapping other water networks in Rwanda and other parts of Africa and to contribute to the implementation of sustainable practices in impoverished nations.

Mayange, with a sector population of 25,000, is one of 80 MVP participants spread across 10 African countries. Located in one of the poorest regions in Rwanda, the area is almost completely deforested and receives 800 millimeters (about 31.5 inches) of intermittent annual rainfall. As in many other rural African areas, Mayange villagers spend hours each day retrieving water their families need to survive. Often, the water source is contaminated, which can cause health problems. The time-consuming retrieval process also diverts efforts from activities crucial to sustainable development, such as education and farming.

The Millennium Villages Project (MVP) was established to create a successful model in Africa for alleviating poverty using a set of integrated, community-driven activities.

Using Garmin GPS equipment and ArcGIS (through their ESRI University Site License), the teams spent a total of 15 days in May 2008 and 2009 in the field mapping and classifying water access points, such as wells, lakes, and cisterns. With help from local village leaders and guides and personnel from Rwanda National University and MVP, the students built a database of water sources by collecting GPS points and classifying each site as a shallow well, open pit, lake, deep borehole, water tap, or cistern.

New online world map shows how climate change and population will change the world

Climate change impacts, demographic trends and reproductive health needs are likely to affect countries' abilities to adapt to climate change, demonstrates a new world map from Population Action International (PAI). The map highlights the potential impacts of climate change on people and the environment, projected population changes in the short- and long-term, and why responses to climate change should include family planning and reproductive health.

"The map shows that high rates of population growth are likely to intersect with negative consequences of climate change in many countries," said Kathleen Mogelgaard, PAI's Senior Program Manager for Population and Climate Change. "Poor and vulnerable populations around the world, those who have contributed the least to climate change, are already suffering its effects." Shifting temperature and precipitation patterns, changes in soil moisture, and extreme weather events are likely to have serious

consequences for agricultural production, water supply, and human health. The map, Mapping Population and Climate Change, illustrates how population growth is likely to compound the impacts of climate change on the world's most vulnerable people. In most of the countries rated least resilient to climate change, the need for family planning and reproductive health services still outstrips availability.
"The world needs to take action now to address climate change, and world leaders need to craft an agreement that is fair, ambitious and binding," commented Kathleen. "Fulfilling the global demand for contraception will improve the lives of women and communities, while reducing vulnerability to climate change impacts."

Eco-cultural mapping to protect natural resources and sacred sites in South Africa

The case of the vhaVenda people echoes throughout many other rural areas in Africa and amongst other groups of traditional and indigenous peoples – the loss of communally owned territories, the expansion of industrial plantations and non-sustainable forms of land and resource use including tourism, the erosion of cultural values and sacred sites.
With support from CTA, women, men and youth from Tshidzivhe community, in Limpopo province, northern South Africa, spent six days exploring ways to 'map' their traditional knowledge and practices for managing their natural resources. As the different maps were finished, the local people celebrated their new capacity to express traditional environmental knowledge in an appropriate way for gaining recognition, reviving traditional practices and securing their rights.
This was a unique mapping experience that involved local people as well as indigenous from other parts of the world. More than 70 vhaVenda people took part, guided by trainers in eco-cultural mapping from Colombia and accompanied by indigenous leaders from the Colombian Amazon and the Russian Republic of Altai. The process required the full participation of community members, especially the elders and the makhadzis, women custodians of sacred sites, but with minimal materials or technology.
Four maps and two ecological calendars were produced, covering what the local population refers to as "Venda territory" and with special attention to the main sacred sites. The maps show the changes and alterations to the land - the past, present and future visions - and the importance of recovering traditional practices and rituals. Trainees from Kenya and Ethiopia, members of the African Biodiversity Network, took part and hope to carry out similar workshops in their respective countries in 2010.

Mapping systems and GIS: a case study using the Ghana National Grid

The problem of incompatible projections and conversion between mapping systems is of general concern to those involved in the collection of natural resources data. The Ghana National Grid (GNG) is an example of a mapping system that is not defined in image processing and GIS software and for which the transformation parameters are not readily available in the literature. Consequently, integrating GNG topographic map data within a GIS with data derived from other sources can be problematic. In this paper a practical solution for deriving the required transformation parameters to convert from the World Geodetic System of 1984 (WGS84) to the GNG system is demonstrated. The method uses a single geodetic control point, available 1:50,000 topographic maps and a SPOT satellite panchromatic image geo-referenced to GNG. The resultant parameters are applied to road survey data in Universal Transverse Mercator (UTM) format for overlay with the SPOT image. Despite the approximations made in applying the method, when compared against official estimates of the datum transformation parameters, this relatively simple procedure resulted in estimates that appear acceptable in regard to combining data sets at a nominal scale of 1:50 000. [Source: Geographical Journal]

NASA outlines recent breakthroughs in greenhouse gas research

Researchers studying carbon dioxide, a leading greenhouse gas and a key driver of global climate change, now have a new tool at their disposal: daily global measurements of carbon dioxide in a key part of our atmosphere. The data are courtesy of the Atmospheric Infrared Sounder (AIRS) instrument on NASA's Aqua

spacecraft. Moustafa Chahine, the instrument's science team leader at NASA's Jet Propulsion Laboratory, Pasadena, Calif., unveiled the new product at a briefing on recent breakthroughs in greenhouse gas, weather and climate research from AIRS at this week's American Geophysical Union meeting in San Francisco. The new data, which span the seven-plus years of the AIRS mission, measure the concentration and distribution of carbon dioxide in the mid-troposphere - the region of Earth's atmosphere that is located between 5 to 12 kilometers, or 3 to 7 miles, above Earth's surface. They also track its global transport. The product represents the first-ever release of global carbon dioxide data that are based solely on observations. The data have been extensively validated against both aircraft and ground-based observations. Chahine said previous AIRS research data have led to some key findings about mid-tropospheric carbon dioxide. For example, the data have shown that, contrary to prior assumptions, carbon dioxide is not well mixed in the troposphere, but is rather "lumpy." Until now, models of carbon dioxide transport have assumed its distribution was uniform.

Carbon dioxide is transported in the mid-troposphere from its sources to its eventual sinks. More carbon dioxide is emitted in the heavily populated northern hemisphere than in its less populated southern counterpart. As a result, the southern hemisphere is a net recipient, or sink, for carbon dioxide from the north. AIRS data have previously shown the complexity of the southern hemisphere's carbon dioxide cycle, revealing a never-before-seen belt of carbon dioxide that circles the globe and is not reflected in transport models. In another major finding, scientists using AIRS data have removed most of the uncertainty about the role of water vapor in atmospheric models. The data are the strongest observational evidence to date for how water vapor responds to a warming climate.

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.

A gentle introduction to GIS (Pdf format)

This document is written for those seeking a broad overview on concepts relating to GIS. The text is particularly aimed at educators as each chapter's runs through that topic's concepts, examples and then a "Now you try!" section. The PDF is divided into major conceptual areas of GIS: an introduction, vector data, attribute data, raster data, data capture, and more. You can find the individual worksheets, videos, and sample data that complement the text on the QGIS site. The document was sponsored by the Chief Directorate, Spatial Planning & Information, Department of Land Affairs, Eastern Cape, South Africa.

JICA-Net (Videoconferencing/E-learning) Remote Sensing & GIS Course, January - March 2010 (January 7, 13, 20, 27, February 3, 10, 17, 24 and March 3)

Organized by Japan International Cooperation Agency (JICA) and supported by Japan Society of Photogrammetry and Remote Sensing.

Learning objective is to promote remote sensing and GIS for the sustainable development of natural resources and environment in developing countries through e-learning or distance education. Contents Outline:

1. The remote sensing course has been designed for promoting remote sensing for the sustainable development of natural resources and environment in developing countries with the financial support of Japan International Cooperation Agency (JICA). The course is intended to be delivered in a lecture style and will be transmitted to target countries as distance learning through satellite communication systems.

2. GIS course has been designed for promoting GIS for the sustainable development of natural resources and environment in developing countries with the financial support of Japan International Cooperation Agency (JICA). The lecture of the course is intended to be transmitted to target countries through satellite communication systems.

This e-learning program is scheduled to be broadcasted in four (4) instruments in Remote Sensing (RS) Course and GIS Course respectively, and each instrument consist of three (3) units of sessions approximately three (3) hours. After the series of eight (8) instruments, (1) instrument and GIS in RS is broadcasted. Under the guidance of local coordinator attending each site, self-learning materials (recorded lectures) will run in the sessions and Q & A sessions with lecturers will be provided live from Tokyo.

e-Learning course on "Statistics, Knowledge and Policy: Understanding Societal Change", March 1 to April 2, 2010

The main objective of this course is to create a greater awareness of the importance of statistics for democracy and democratic decision-making; measures of progress that go "beyond GDP"; tools to transform statistics into knowledge; evidence, civic engagement and policy making. It is part of the OECD-hosted Global Project on Measuring the Progress of Societies, which aims to foster the development of sets of key economic, social and environmental indicators to provide a comprehensive picture of how the well-being of a society is evolving. The Global Project seeks to encourage each society to consider, in an informed way, the crucial question: is life getting better? It also seeks to encourage the use of indicator sets to inform and promote evidence-based decision-making, within and across the public, private and citizen sectors. Course fee is USD 800 per participant per course and needs to be settled by the applicant upon registration.

Distance learning course: Introduction to the use of GIS in spatial epidemiology using ArcGIS9.x, February - July 2010

The purpose of this GIS-course for beginners is to familiarize veterinary and medical doctors with the use of geographic information systems (GIS) in particular reference to spatial epidemiology and the development of spatial decision support systems. The on-line course will be presented at a post-graduate level and consists of two parts. In the theoretical part, students will gain a conceptual understanding of the role GIS can play in epidemiological studies. The second part of this module consists on hands-on exercises using ArcGIS-software. Students will acquire basic skills on how to use GIS in epidemiological studies.

This module is organised and coordinated by Avia-GIS (www.avia-gis.com). Avia-GIS, "Agriculture and Veterinary Information and Analysis", is a Belgian consultancy company founded in 2001 that specializes in the collection, processing and analysis of spatial information, and the development of space-time information systems with particular reference to animal health and production, agriculture, public health and health-environment. For the approved ICONZ project (http://www.iconzafrica.org/) applicants (1 student per partner), this course is offered for free. For others, pricing details can be requested at info@avia-gis.be.

Scholarships for Erasmus Mundus Masters course in Environmental Sciences, Policy and Management

MESPOM is an Erasmus Mundus Masters course in Environmental Sciences, Policy and Management. It is operated by four leading European and two North American Universities and supported by the European Commission. MESPOM prepares students for identifying and implementing solutions to complex environmental challenges, especially in an international context. Interested scholars are required to apply to the MESPOM Consortium by e-mail by April 1, 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 expands global presence within ESRI South Africa

ESRI, the world's leading enterprise GIS technology provider has announced the acquisition of GIMS (Pty) Ltd. As a result, effective 1 December 2009, GIMS will be known as ESRI South Africa. GIMS has served the GIS community throughout Southern Africa as the official ESRI Distributor for the past 20 years.

ESRI South Africa course schedule for February 2010

- ArcGIS Desktop II: Tools and Functionality - Port Elizabeth
- ArcGIS Desktop 1: Getting Started with GIS - Midrand
- Introduction to ArcGIS Server - Midrand

L'Ecole Régionale post-universitaire d'Aménagement et de gestion Intégrés des Forêts et Territoires tropicaux (ERAIFT) [Regional School on Integrated Management of Tropical Forests and Territories – **Promotion : inscriptions ouvertes**, Kinshasa, République Démocratique du Congo. Le cursus de l'ERAIFT aboutit à l'obtention d'un Diplôme d'Etudes Supérieures Spécialisées (DESS). Ce diplôme est l'équivalent d'un Master du système « LMD » (Licence, Master, Doctorat) des Accords de Bologne. Il est reconnu par le Conseil Africain et Malgache pour l'Enseignement Supérieur (le CAMES). Le programme du DESS comprend 16 chaires dont l'enseignement s'étend sur une période de 12 mois. L'étudiant dispos ensuite de 6 mois pour rédiger son mémoire. Le contenu de ce dernier repose sur l'approche systémique, et s'inscrit dans le cadre de l'aménagement intégré du territoire, du développement humain, durable et écologiquement viable, de la lutte contre la pauvreté et de la gestion rationnelle de l'environnement. L'autre grade décerné par l'ERAIFT est le Diplôme de Philosophiae Doctor (Ph.D.) en Aménagement et gestion intégrés des forêts et territoires tropicaux. Bourses disponibles, mais limitées en nombre. Contact: info@eraift.org.

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

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

ITC Distance Learning - Certificate

- GIS Data Quality (6 weeks). Starting date: 15 March 2010. Deadline for application: -. Register.
- Multi-Hazard Risk Assessment (6 weeks), Starting date: 17 May 2010. Deadline for application: 26 April 2010. Register.
- Principles of Remote Sensing (8 weeks). Starting date: 17 May 2010. Deadline for application: 26 April 2010. Register.
- 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.

Funding Opportunities, Awards, Support

Tanzania-International Fellowships Program

IFP-Tanzania is hereby announcing the fellowships for advanced study, of up to three years of study to exceptional individuals with potential qualities and who will use their education to further development in their own communities and the nation, ultimately bringing about greater social and economic justice in the country and also worldwide. IFP fellowships will be awarded to applicants from diverse backgrounds, more specifically, to those from social groups and communities that lack systematic access to higher education.
A total of Seventeen (17) fellowships will be awarded to deserving Tanzanians, for the 2011/2012 academic year to undertake Masters Programme only. The applicant must:

- Be resident or resident nationals of Tanzania or other official resident of Tanzania
- Hold an honors bachelor's degree- for those applying for Masters Fellowships
- Have demonstrated leadership skills and commitment to community service and/ or national development.
- Have significant relevant professional or other work experience related to proposed field of study, of not less than three (3) years.
- Intent to pursue a post-graduate degree that will directly enhance their leadership capacity in an academic, policy, practical or artistic discipline and field corresponding to one or more of the Foundation's areas of endeavor.
- Present a plan specifying how they will apply their studies to social problems in their own countries.

Priority will be given to people living and working with communities outside the major cities or those working with marginalized groups in rural or urban poor. Download Application Form–1764–Kb or from the City Librarian at the Tanzania Library Services Headquarters in Dar es Salaam or from the Regional Librarians at: Arusha, Bukoba, Dodoma, Iringa, Kigoma, Mbeya, Morogoro, Moshi, Mtwara, Musoma, Mwanza, Shinyanga, Singida, Songea, Sumbawanga, Tabora, Tanga and Manyara. Applicants from Zanzibar can obtain the Application Forms from ANGOZA Offices, the Zanzibar Library Service and the State University of Zanzibar. More information, contact: the Program Coordinator, Ford Foundation International Fellowship Program in Tanzania Economic and Social Research Foundation (ESRF) at ifp-at-esrf.or.tz. Website: http://ifptanzania.esrftz.org/. Deadline for applications: 5.00 p.m. on 15 February 2010.

Call for Nominations: UNDP Equator Prize 2010

The Call for Nominations for the Equator Prize 2010 officially opened on 11 January 2010. The Equator Prize is awarded biennially by the UNDP Equator Initiative for outstanding local, indigenous and community efforts to reduce poverty through the conservation and sustainable use of biodiversity. Now in its fifth award cycle, the Equator Prize has special significance during the International Year of Biodiversity, 2010. The Equator Prize 2010 will be awarded to twenty-five local and indigenous communities from across the tropics; twenty will receive US$5,000 and a further five will be selected as special recognition winners and receive a total of US$20,000. Special recognition will be awarded in each region of prize eligibility (Africa, Asia and the Pacific, and Latin America and the Caribbean), one for indigenous peoples and applied traditional knowledge, and one for ecosystem-based adaptation to climate change. Equator Prize winners receive international recognition for their work and opportunity to shape international policy and practice in the field. Equator Prize winners are selected on the principal criteria of impact, partnerships, sustainability, innovation and transferability, leadership and community empowerment, as well as gender equality and social inclusion. Past Equator Prize winners have spanned fields of work ranging from agro-forestry to seed banks, agriculture to

enterprise, indigenous and community-conserved areas to locally-managed marine areas, adaptation to climate change to organic farming, and more. Equator Prize winners share the common feature of reconciling viable livelihoods with the maintenance of biological diversity and ecological balance.
Nominations for the Equator Prize 2010 must be received by 28 February 2010 You are encouraged to nominate qualified community initiatives that are active in environmental conservation and sustainable livelihoods within the equatorial region. Self-nominations are also welcome. For more information, contact joseph.corcoran@undp.org.

URISA Exemplary Systems in Government (ESIG) Awards

The Urban and Regional Information Systems Association (URISA) have recently posted the 2010 application materials for its prestigious Exemplary Systems in Government (ESIG) Awards. The awards recognize exceptional achievements in the application of geospatial information technology that have improved the delivery and quality of government services.
Applications may be submitted in two categories, Single Process and Enterprise Systems. Applications must be submitted by 3 May 2010. Winners in each category will be recognized at URISA's 48th Annual Conference, 28th September to 1st October 2010 in Orlando (FL, USA).

ESRI 2010 Mashup Challenge

Create an innovative mashup using ArcGIS Online and Web Mapping APIsfor the chance to win one of four cash prizes. Awards will be based on originality, creativity, and analytic process.

- 1st Place: $10,000
- 2nd Place: $5,000
- 3rd Place: $2,500
- 4th Place: $2,500

Getting Started - Build a mashup using ArcGIS Online and ESRI Web Mapping APIs. Shoot a video of your application and post it on YouTube. Submit your mashup.
Resources - Choose an API and download it. An ESRI Global Account is required to download theFlex (Flex samples) and Silverlight (Silverlight samples) libraries. There is no download for JavaScript (JavaScript samples). Add data to your map (Get map layers). The competition submission d**eadline:** 5 March 2010.

Google Model Your Town Competition

Google has announced the first international Google Model Your Town Competition and invites people to use free sketching tools to create a 3D portrait of their community and ensure its place on the 3D world map. You can model as many structures as you like which types of buildings you choose to include is entirely up to you. The important thing is that your choices say something about the character and history of your town.

- Modeling teams may include up to six members.
- Buildings can be modeled with SketchUp, a free and relatively easy-to-use 3D modeling program from Google. You use SketchUp in combination with Google Earth to give models a precise geographic location.
- Buildings can also be modeled with Google Building Maker if your town is located in an area where Building Maker data is available. These models can also be edited and improved with Google SketchUp.
- Each completed building model should be uploaded to a dedicated town collection on theGoogle 3D Warehouse.
- Join our Google Competition Group to discuss ideas and issues with other modelers. It's also a great way to find people to help you form a team.
- To enter, each team must complete and submit an online entry form.

The winning individual/team will receive:

- USD$10,000 for the town's public school district (or international equivalent)
- Visit from a Google team, along with an event in the winners' hono
- Video profile of the winning team and their town, to be featured on YouTube
- Virtual tour of the winning town that will be added to the Google Earth website
- International publicity in the form of blog posts, tweets and other media

- Additional coverage on Google websites

The competition submission deadline: March 1, 2010.

Le Programme Bourses 2010-2011 du CIUF

Dans le cadre du programme des cours et stages internationaux 2010-2011, le Conseil interuniversitaire de la Communauté française (CIUF) accorde 150 bourses d'études et 70 bourses de stage. Des bourses de stages et cours sont ouverts à la candidature par le Conseil interuniversitaire de la Communauté française de Belgique Commission universitaire pour le Développement (CUD). Soit originaire d'un pays en développement, conformément à la liste établie par l'OCDE. Pour être éligibles, les candidats doivent résider et travailler dans leur pays au moment de l'introduction du dossier. Priorité sera accordée aux ressortissants des pays suivants : Afrique du Sud, Algérie, Bangladesh, Bénin, Bolivie, Brésil, Burkina Faso, Burundi, Cambodge, Cameroun, Chine, Colombie, Côte d'Ivoire, Cuba, Equateur, Ethiopie, Guatemala, Guinée, Haïti, Inde, Indonésie, Kenya, Madagascar, Mali, Maroc, Mozambique, Nicaragua, Niger, Ouganda, Pérou, Philippines, RD Congo, Rwanda, Salvador, Sénégal, Suriname, Tanzanie, Territoires Palestiniens, Vietnam, Zambie, Zimbabwe. Soit âgé de moins de 40 ans pour les cours, et de moins de 45 ans pour les stages, et ce au moment du début de la formation. Date limite: 15 fevrier 2010. Le formulaire de demande de bourse sera soigneusement complété et envoyé à la CUD, uniquement par courier postal ou courier express. **Stage en** , du 16 août 2010 au 15 décembre 2010) (4 mois) Il y a 14 bourses disponibles. Contact: M. Moritz Lennert, moritz.lennert@ulb.ac.be.

Russell E. Train Fellowships for Conservation Studies

WWF's Education for Nature Program has announce the availability of Russell E. Train Fellowships for students from Bolivia, Colombia, Ecuador, Kenya, Mexico, Papua New Guinea, Peru, Tanzania, and Timor Leste who are pursuing master's and doctoral degrees in conservation-related fields. Train Fellowships provide up to two years of support for education-related costs including tuition and fees, room and board, books, travel, and research. Applicants must be citizens or permanent residents of a participating country and must have at least two years' experience in conservation. Applicants must have applied to, have been accepted to, or be currently enrolled in a conservation-related degree program at an accredited institution of higher education. Applications from Kenya, Mexico, Papua New Guinea, Tanzania, and Timor Leste are due by February 28, 2010.

International Tropical Timber Organisation (ITTO) Fellowship Program

ITTO offers fellowships through the Freezailah Fellowship Fund to promote human resource development and to strengthen professional expertise in member countries in tropical forestry and related disciplines. The Programme supports mainly short-term activities, such as participation in international conferences, training internships at industries, research and educational institutions, study tours and lecture/demonstration tours, but also help people to prepare technical documents, publication and dissemination such as manuals and monographs, and provide small grants for post-graduate study. The maximum amount for a fellowship grant is US$10,000. ITTO Fellowship Award provides tuition/training/conference fees, transportation fees, daily subsistence allowance, book allowance and other allowances. For post-graduate studies, only a partial tuition fee or a small research grant can be provided. Only nationals of ITTO member countries are eligible to apply, and fellowships are awarded mainly to nationals of developing member countries. Application deadline: 19 February 2010 for fellowship activities that will start after 1 July 2010.

Gilchrist Biennial Award for a Senior Overseas Research Project

The Gilchrist Educational Trust offers this Award of £15,000 to support original and challenging overseas fieldwork carried out by small teams of university academics and researchers. The Award, created by the Trust in 1990, and judged in conjunction with the Royal Geographical Society (with The Institute of British Geographers), is intended to cover a significant proportion of the costs of the proposed research. Applications are now invited for overseas projects planned for 2010 and/or 2011. The research should be original and challenging, preferably of potential applied benefit to the host country or region. It may be multi-disciplinary or

devoted to a single scientific objective. The team should comprise up to 10 members, the majority of whom should be British. Next deadline: 26 February 2010.

Captain Planet Foundation Funding for Youth Environmental Projects

The mission of the Captain Planet Foundation is to fund and support hands-on environmental projects for children and youth. The foundation's objective is to encourage innovative programs that empower children and youth around the world to work individually and collectively to solve environmental problems in their neighborhoods and communities. Through environmental education, the foundation believes that children can achieve a better understanding and appreciation of the world in which they live. The foundation offers small grants of $500 or less each, as well as a limited number of grant awards ranging from $500 to $2,500 each. Applicants must be at least 18 years old to submit a proposal. Deadlines for submitting grant applications are June 30, September 30, December 31, and March 31. Grant proposals are reviewed over a period of three months from the date of the submission deadline. Visit the Captain Planet Foundation Web site for complete program information and guidelines.

Employment Opportunities

Director - ICSU Regional Office for Africa, Pretoria, South Africa

The International Council for Science (ICSU) invites applications from citizens of countries in Sub-Saharan Africa for the post of Director of its Regional Office for Africa (Sub-Saharan Africa), which was established at the National Research Foundation (NRF), Pretoria, South Africa in 2005. The Director is responsible for the activities of the Regional Office under the direction of the ICSU Executive Director. The staff of the Office currently consists of a total of four persons. The Director is appointed for a term of three years, renewable, under the general conditions applicable to staff at NRF.

The successful candidate should have:

- PhD degree in a scientific discipline (or equivalent experience), and a minimum of 5 years' experience in scientific research and administration, including experience of international research collaboration.
- Fluent in written and spoken English; some knowledge of French and/or Portuguese is an advantage.
- Excellent skills in strategic planning as well as management abilities, including the capacity to administer financial resources and exercise appropriate supervision and control.
- Ability to work with people from different nationalities and cultural backgrounds and be prepared to travel internationally.
- Prior knowledge of ICSU and its major partners, such as UNESCO and the Academy of Sciences for the Developing World (TWAS), and of African regional initiatives for science would be an additional advantage.

Applications including (1) a CV, (2) a letter outlining the strengths the candidate can bring to the ICSU Regional Office and (3) the names and addresses of three referees should be sent to: Professor Deliang Chen at ROA_director@icsu.org. It is expected that the Director will start his/her appointment on 1 May 2010. Deadline for submission of applications: 20 February 2010.

GIS Mapping Associate, Kilifi, Kenya

This role is critical for all operations - to map out in detail a remote area with few strong existing maps. Understanding our communities and farms will help us better serve our farmers both, and cost-effectively - from planting, to maintenance, to harvesting. The incumbent will:

1. Develop systems and capacity for comprehensive GIS mapping of communities and farms: mapping farms, geographic elements, water sources, roads (paved and unpaved) paths, etc
2. Develop and maintain farmer GIS database: feeding GIS mapping intelligence into database
3. Develop insights into potential ways to increase effectiveness and efficiency of our operations: collaborating with field staff to understand current operational logistics to uncover areas for improvement

Qualifications:

- Education: Top-performing undergraduate and/or graduate background in a relevant field (e.g. geography, computer programming, etc)
- Relevant work experience:

- 2+ years experience in GIS-related field (GIS technician/analyst, mapping technician, application/data specialist, engineering aide, etc)
- Technical skills: Strong GIS and spatial skills with 2+ GIS packages; strong cartography/geography skills; strong Macro/ C / C++ / Visual Basic programming skills; understanding of - or willingness to learn -math and statistical analysis; proficiency in operating and troubleshooting of a range of GPS hardware (Trimble, Garmin, etc.) and ability to train local staff with no computer skills in their use
- Operational skills: evidence of ability to excel in hands-on role; ability and/or strong willingness to ride motorcycles and drive manual transmission 4x4 vehicles in remote locations
- Strong and proactive communicator: personable yet persistent; building consensus and influencing Director decision-making; adapting to local cultural norms and communication styles; developing detailed and high-quality written materials

KOMAZA Associates who are one 1+ year contracts receive modest compensation and benefits for their pioneering work. KOMAZA covers basic needs for a comfortable standard of living in Kilifi, and provides an allowance which is sufficient for a modest but enjoyable experience. Start date: Flexible, 2010. [Source: SCGIS-Kenya List]

Senior Programme Officer, Nairobi, Kenya
Under the general guidance of the Director, DEPI and the direct supervision of the Chief, Climate Change Adaptation Unit, the incumbent will carry out the following responsibilities:
Policy Analysis: Develop and formulate policies and strategies under the work-programme for climate change adaptation. Advise and provide technical assistance to governmental, intergovernmental and non-governmental organizations and scientific communities on the UNEP climate change strategy.

1. Programme development and project implementation: Interpret the UNEP climate change strategy and subsequent agreement with project partners and stakeholders; Develop key indicators for monitoring overall results of adaptation programme with the UNEP Medium Term Strategy especially Ecosystem Management.
2. Programme Management: Develop a network of partnerships with governments and institutions;
3. Knowledge management and communication: Supervise the focal point for the DEPI Work Programme under the UN Framework on Climate Change Committee; Develop an internal communication strategy for building awareness, technical capacity and UNEP wide support;

Education:

- Advanced university degree (Master's degree or equivalent) in environmental policy management/environmental sciences or a related area. A first level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of 10 years of progressively responsible experience in environmental programme management in climate change issues. At least 5 years of experience at the international level working on climate change issues is required.
- Experience on project implementation/management is required. Experience within the UN system is required.
- Fluency in oral and written English is required. Knowledge of another UN official language is an advantage.

Deadline for application: 22 February 2010. How to apply: http://www.unep.org/vacancies.

Chief, Ecosystems Services Economics Unit, Nairobi, Kenya
This post is located in UNEP/DEPI at the Nairobi duty station. Under the direct supervision of the Deputy Director, DEPI, the incumbent will carry out the following:

1. Ecosystem Services: Lead the development of normative frameworks, approaches and tools for UNEP and its partners; Develop the UNEP-wide strategy on ecosystem services including Millennium Assessment follow up activities; Establish working relationships with networks and act as the UNEP-wide focal point for all activities related to the economics of ecosystem services; Develop, establish and maintain a set of sound policies, procedures, standards and tools in support of the mainstreaming of ecosystem services;
2. Economics: Lead and participate in the formulation, organization and management of mandated programmes of economic analysis and the formulation of possible economic strategies; Lead and participate in the identification of new or emerging development issues related to ecosystem services of

potential concern to the international community; Commission economic studies and analyses; Finalize reports on development for issuance by the United Nations.
- Advanced university degree (Master's or equivalent) in economics, environmental policy or environmental sciences. A first level university degree in combination with qualifying experience may be accepted in lieu of the advanced university degree.
- A minimum of ten years of progressively responsible experience in economics and environmental policy development. Experience in international initiatives in the field of economics and ecosystem services is required. Experience in the management of portfolio projects and multi-disciplinary teams an advantage.

Deadline for application: 20 February 2010. Contact: Recruitment@unon.org.

Coordinator: Adaptation, Technology and Science Programme, Bonn, Germany.
The secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) is seeking to fill a senior position as Coordinator, Adaptation, Technology and Science Programme. The Adaptation, Technology and Science programme of UNFCCC supports Parties in assessing and developing strategies and actions to meet their specific needs and concerns relating to adaptation and mitigation to climate change, impacts of the implementation of response measures and technology transfer.
As a member of the senior management, the Coordinator directs and manages the activities and operations of the Adaptation, Technology and Science programme, ensuring the successful implementation of the programme of work and the effective management of its financial and human resources; s/he contributes to the overall management of the secretariat through membership in managerial groups.
Candidates should possess: An advanced university degree in engineering, physical or environmental science, economics or related disciplines. A combination of relevant academic qualifications and extensive experience may be accepted in lieu of the advanced degree. At least fifteen (15) years of progressively responsible professional experience including on issues related to climate change and complex negotiations in an international environment. Four to five years should have been at international level. Use the on-line application system. .Qualified women candidates and candidates from developing countries are especially encouraged to apply. Deadline for application: 18 February 2010.

Assistant Professor of Geographic Information Science, Clark University, USA
Clark University invites applications for an assistant professor position in Geographic Information Science (GIS) to begin Fall 2010. This is a three-year term appointment with the possibility of renewal. We are particularly interested in candidates with a specialization in one or more of the following GIS application areas: public health, environmental justice, food security, and humanitarian assistance. A major responsibility will be to teach core courses in GIS (including both raster and vector analysis) and to advise students in Clark's Master of Arts program in GIS for Development and Environment. PhD. or equivalent in a relevant discipline is required by May 2010. Knowledge of programming languages used in GIS, experience with geospatial analysis and online mapping applications are also highly desirable.
This position will serve the needs of the Department of International Development, Community, and Environment (IDCE) (www.clarku.edu/departments/idce) and Clark's School of Geography (www.clarku.edu/departments/geography). Applicants must show a commitment to teaching and working collaboratively within an interdisciplinary program. A detailed statement of interest, curriculum vitae, and a list of references should be sent via email attachment to Jackie Murphy at jmurphy@clarku.edu or via postal mail to the GISDE Search Committee, IDCE, Clark University, 950 Main Street, Worcester, MA 01610. Review of applications will begin January 15 and will continue until the position is filled. AA/EOE Minorities and Women are strongly encouraged to apply.

Other

Carbon Forestry - Tanzanian CDM/VCS Case Study
Green Resources is developing a VCS project in Mapanda/Uchindele, Tanzania and a CDM project in Idete, Tanzania. The VCS project because the first reforestation project in the world to be validated and registered according to the VCS standard. The PDD for the CDM project is about to be submitted. This study describes the project and some of the advantages, opportunities and pitfalls around reforestation projects. Reforestation is critical to the future of CDM in Africa and to the success of REDD and this is discussed in detail in the study.

Forest plantations account for a smaller share of the land area in Africa than any other place on Earth. Green Resources (www.greenresources.no) believes high quality reforestation creates development and combats climate change. Reforestation is also a fundamental requirement of any successful REDD project, which is explained at length in this article. We are proud of being the leading reforestation company in East and Southern Africa and want to set the record straight. Green Resources started planting trees for carbon sequestration and wood material in Tanzania's' Southern Highlands and Jinja, Uganda in 1997, just as the Kyoto protocol had been signed. We are a long term investor in East and Southern Africa and have established a company employing more than 3,000 people, managed primarily by East and Southern Africans. The company continues to invest in carbon and forestry projects, despite not being able to generate any return on the investment to the shareholders since we started up. Since the start, Green Resources has planted more than 7,500 ha of new forest in Tanzania's' Southern Highlands, sequestering over 500,000 tons of CO2e to date. The company has in total planted 15,000 ha new forest in East and Southern Africa. We forecast that the Mapanda/Uchindile projects will create over 3.5mn VCUs over their lifetime while at Idete more than 1.8mn tCERs will have been generated by 2020. This is a significant contribution to the fight against climate change. For further information, contact Mads Asprem at info@greenresources.no.

Land Management under the Land Use Act in Nigeria

The Land Use Act of 1978 is made up of eight parts of fifty-one sections. It addresses four important issues arising from the former land tenure systems in Nigeria: the problem of lack of uniformity in the laws governing land-use and ownership; the issue of uncontrolled speculation in urban land; the question of access to land rights by Nigerians on equal legal basis; and the issue of fragmentation of rural lands arising from either the application of traditional principles of inheritance and/or population growth and the consequent pressure on land. It approaches these issues via three related strategies: the vesting of proprietary rights in land in the State; the granting of usufructuary rights in land to individuals; and the use of an administrative system rather than market forces in the allocation of rights inland (Uchendu 1979:71; Francis 1978:12).
In the discussion that follows, the structure of the Act will be followed. The General principles of the Act state that: subject to the provisions of this Decree, all land comprised in the territory of each State in the Federation are hereby vested in the Military Governor of the State and such land shall be held in trust and administered for the use and common benefit of all Nigerians. (Nigeria Land Use Act, 1978: Part 1: A. 49).
The Act altered the existing land laws (particularly in the Southern part of the country) in three fundamental ways: it removed corporate .groups, families and chiefs from the trusteeship of land and replaced them with the State governor; individual interests in land which have expanded with economic development arising from the 'oil boom' are now one of occupancy and therefore fall short of the plenary. Consequently, the community's alloidal interests in land are denied or frozen: and the Act broke up local sovereignties and merged them into a single sovereign (Uchendu 1979). The Act also distinguishes between two types of land - urban and other lands (presumably rural lands). While urban lands were placed under the control and management of the Governor of the State with a 'Land Use and Allocation Committee' as an advisory body, on the other hand, 'other lands' were placed under the control and management of the Local Government in which the land is situated with 'the Land Allocation Advisory Committee' (Land Use Act 1978: Sections 2(1) a and b). Two radical changes flow from Part 1 of the Act. The legal status\of the Nigerian land user becomes that of statutory occupancy, not one of ownership and the economic interests and benefits of 'statutory rights of occupancy are severely limited by law since proprietary interests in land are lost and claims are restricted to improvements made on the land. The paper is concluded with three recommendations.

- There is the urgent need for the recruitment and training of land surveyors, town planners and other technical staff, all of whom are in short supply both at the Federal, State and Local Government levels to enforce the existing building, urban and regional planning regulations as provided for by the Urban and Regional Planning Act of 1992.
- There is the need for a survey of property boundaries as well as the provision of cadastral maps.
- Federal Government should commission, without further delay, the registration of title to land with a view to keeping a land register which should be available at Federal, State and Local Government levels. With recent advancements in the use of satellite imagery, Geographical Information System (GIS), as well as Geographical Positioning System (GPS), the issue of land registration should not be that difficult except, of course, the cost.

UN helping to monitor volcanic eruption in DR Congo

Following the eruption of a volcano in the far east of the Democratic Republic of the Congo (DRC), the United Nations peacekeeping mission in the country is using its aviation force to help to keep a close eye on lava flow. Mount Nyamulagira, which sits some 40 kilometres northwest of Goma, the capital of North Kivu province, erupted on 2 January 2010, and while it has not affected any people, the lava has spewed into a non-populated area of the Virunga National Park.
The UN mission known as MONUC has put its Indian aviation force and helicopters at the disposal of local authorities, scientists with the Volcanic Observatory of Goma and the National Institute for the Conservation of Nature (ICCN) to help monitor volcanic activity.
MONUC said that for now, the population of Goma and its surrounding areas seem to be safe from any lava flow, but that the mission stands ready to provide additional support to officials, who have assured people that the nearby volcano of Nyiragongo will be unaffected by the eruption of Nyamulagira.
The ICCN has expressed concern over the threat posed by the volcanic eruption on Virunga National Park's ecosystems and wildlife, including the possible migration or death of animals in the site. The Broadcast Quality Downloads MPEG-2 files with a bit rate of 8 MBPS are available in both PAL and NTSC formats.
View the full script:

- Wide shot, Nyamuragira Volcano smoking
- Wide shot, Nyamuragira Volcano spewing lava
- Wide shot, big splash of lava
- Various shots, mouth of volcano
- Various shots, volcano
- Various shots, lava flows
- Various shots, forests with lava flowing
- Wide shot, lava flowing from volcano

To request for older material, contact the agency source.

80% by 2050 targets on greenhouse gas emissions can be achieved with today's technologies

Leading sustainable development experts, including Ernst von Weizsäcker and Karlson 'Charlie' Hargroves show in a new book - Factor Five - that using today's technologies and strategies, we can meet the 80% by 2050 targets on greenhouse gas emissions. As an update of the seminal book, Factor Four, this new book presents a rigorous and detailed case for achieving 80 per cent improvements in resource productivity across the major energy and water intensive sectors, supported by key understandings of the required policy frameworks and considerations.
If you would like to review the book for a print or online publication, contact: gudrun.freese@earthscan.co.uk for a review copy (or an inspection copy (available to course leaders of e.g. Climate Change; Undergraduate Engineering and Design; and Engineering and Design Professional Development courses, among others).

Fighting climate change with grasslands

Grasslands have vast untapped potential to mitigate climate change by absorbing and storing Carbon Dioxide (CO_2), according to a new report by the Food and Agriculture Organisation (FAO). Pastures and rangelands represent a carbon sink that could be greater than forests if properly managed, the Rome-based UN agency said in a press statement. Covering some 30 percent of the earth's ice-free land surface and accounting for 70 percent of its agricultural land, the world's 3.4 billion ha of grasslands can also play a major role in supporting the adaptation and reducing the vulnerability to climate change. It plays a key role in reducing vulnerability to climate change to over one billion people who depend on livestock for a living, according to the report entitled: 'Review of Evidence on Dry lands Pastoral Systems and Climate Change'. 'The world will have to use all options to contain average global warming with in 2 degrees Celsius," the report said.
Agriculture and land use have the potential to help minimize net greenhouse gas emissions through specific practices, especially building soil and biomass carbon. Grazing lands are estimated to store 30 percent of the world's soil carbon, in addition to the substantial amount of above-ground carbon held in trees, bushes, shrubs and grasses. But they are particularly sensitive to land degradation, which affects some 70 percent of pastures as a result of overgrazing, salinization, acidification and other processes. Pressure on the land is also increasing in order to meet fast-growing demand for meat and dairy products. Improved management practices restoring organic matter to grassland soils, reducing erosion and decreasing losses from burning and overgrazing. A more immediately feasible target would be to place 5-10 percent of global grazing lands under carbon sequestration management by 2020, which could store 184 million tonnes of carbon a year.

Socio-political and economic barriers need to be overcome too. They include land tenure, common property and privatization issues; competition from cropping; and lack of education and health services for mobile or nomadic pastoralists. The report suggest that measures promoting improved grasslands management should include payment for environmental services (PES) which include both financial rewards and non-financial incentives such as capacity building and knowledge sharing.

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

Conferences, Events

Date	Location	Event
February 2010		
1-5 February 2010	Maun, Botswana	**International symposium: Wetlands in a flood pulsing environment - effects on biodiversity, ecosystem function and human society** Deadline for abstracts: 1 October 2009.
2 February 2010	Addis Ababa, Ethiopia	**2010 Euro-Africa Cooperation Forum on ICT Research** Learning and Reflecting on ICT Collaborative Research and Development - Projecting the Future of ICT Research in Africa
2-4 February 2010 ***NEW***	Turin, Italy	**6th International Symposium on Remote Sensing & Geo-Information for Environmental Emergencies (Gi4DM 2010)** - Geomatics for Crisis Management Abstract deadline: September 15, 2009.
9-11 February 2010 ***NEW***	Cape Town, South Africa	**NEPAD ICT Africa Summit 2010** Contact: charlainev@ikapamedia.co.za.
10-14 February 2010 ***NEW***	St. Maarten, Netherlands Antilles	**EOProcessing 2010: 2nd International Conference on Advanced Geographic Information Systems, Applications, and Services**
15-17 February 2010	Cotonou, Benin	**2nd Regional Workshop in the Workshop Series of the GEO Coastal Zone Community of Practice (CZCP)**
18 February 2010	Midrand, South Africa	**Spatially-enabled Information Services Conference**
21-24 February 2010	Dubai, UAE	**2nd Annual Middle East and North Africa (MENA) GIS Conference**
21-24 February 2010 ***NEW***	Dubai, UAE	**GISWorld (formerly known as PetroGIS)**
21-27 February 2010	Dar es Salaam, Tanzania	**4th International Conference on Community-Based Adaptation**. Contact: Saleemul Huq, Hannah Reid at saleemul.huq@iied.org or hannah.reid@iied.org.
22-26 February, 2010	Brazzaville, Republic of Congo	**17th Session of the African Forestry and Wildlife Commission and 1st African Forestry and Wildlife Week**
23-26 February 2010	New York, NY, USA	**41st Session of the Statistical Commission**
March 2010		
1-3 March 2010	Stellenbosch, South Africa	**Precision Forestry Symposium** Abstract deadline: 30 November 2009.
3-5 March 2010	Nairobi, Kenya	**2nd All-Africa Carbon Forum**
3-5 March 2010	Addis Ababa, Ethiopia	**ILRI Workshop on Adaptation to Climate Change**
6-10 March 2010	Alexandria, Egypt	**International Conference on Coastal Zone Management of River Deltas and Low Land Coastlines**. Abstract deadline: 31 October 2008. Contact: Professor Nabil Ismail, nicoastmarine@gmail.com.

18 March 2010 *NEW*	Johannesburg, South Africa	**Mobile Commerce World Africa** - Current trends and strategies driving the uptake of mobile technology in Africa
22-23 March 2010	Kampala, Uganda	**ICT and Development - Research voices from Africa**
23 -26 March 2010 *NEW*	Fukuoka, Japan	**5th International Workshop on Geographical Analysis, Urban Modeling, Spatial Statistics**
24-26 March 2010 *NEW*	Agadir, Morocco	**2nd International Conference: Integrated Water Resources Management and Challenges of the Sustainable Development (GIRE3D)** Tools and technologies; Impact of climatic changes; Quantitative and qualitative aspects. Abstract: August 31, 2009.
25-26 March 2010	Cape Town, South Africa	**International Conference on Information Management and Evaluation (ICIME 2010)** Organized by University of Cape Town, Department of Information Systems.
25-28 March 2010	Yaounde, Cameroon	**International Conference on ICT for Africa 2010 (ICIA 2010)** Theme: ICT for Development - Contributions of the South. Deadline for full papers: December 1, 2009.
30 March - 1 April 2010 *NEW*	San Jose, CA, USA	**2010 O'Reilly Where 2.0 Conference**
April 2010		
5-9 April 2010	Hammamet, Tunisia	**19th Session of the Near East Forestry Commission** Contact: Moujahed Achouri moujahed.achouri@fao.org.
9-16 April 2010	Sydney, Australia	**International Federation of Surveyors (FIG) 2010**
11-15 April 2010	Cape Town, South Africa	**INORMS 2010 - Organisation for Research Management Societies**
11-16 April 2010	Sydney, Australia	**XXIV FIG International Congress 2010**
12-16 April 2010	Nairobi, Kenya	**African Ministerial Conference on Weather, Climate and Water Information**
14-16 April 2010	Addis Ababa, Ethiopia	**UN-SPIDER Regional Workshop "Building Upon Regional Space-based Solutions for Disaster Management and Emergency Response for Africa"**
14-16 April 2010	Zahedan, Iran	**4th International Congress of Islamic World Geographers (ICIWG2010)** Contact: M_A_Daraei@yahoo.com. Abstract deadline: 22 October 2009.
14-16 April 2010	London, UK	**GISRUK Conference 2010** Theme: Global Challenges
25-29 April 2010 *NEW*	Phoenix, AZ, USA GITA	**2010 Geospatial Infrastructure Solutions Conference (GISC2010)** info@gita.org
May 2010		
3-7 May 2010	Paris, France	**5th Global Conference on Oceans, Coasts, and Islands** For more information contact: Miriam C. Balgos at mbalgos@udel.edu.
10-21 May 2010	Nairobi, Kenya	**4th Meeting of the CBD Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA 14)**
11-14 May 2010	Guimarães, Portugal	**13th AGILE Conference on Geographic Information Science**
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.
26-28 May 2010	Lusaka, Zambia	**5th International Conference on ICT for Development, Education and Training (eLearning Africa 2010)** Deadline: December 14, 2009.
June 2010		

2 June 2010	Enschede, The Netherlands	**International Society for Photogrammetry and Remote Sensing Symposium on Education & Outreach 2010.**
12-14 June 2010 *NEW*	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
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.
28 June-2 July 2010	Bergen, Norway	**Living Planet Symposium** Abstract deadline: 1 December 2009.
28 June - 2 July 2010	Edinburgh, Scotland	**18th Commonwealth Forestry Conference** Theme: Restoring the Commonwealth's Forests: Tackling Climate Change. Contact: E-mail: 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** Deadline for papers and extended abstracts: February 1, 2010.
10-13 July 2010 *NEW*	San Diego, CA, U.S.A.	**ESRI Survey & Engineering GIS Summit**
12-16 July 2010	San Diego, CA, USA	**2010 ESRI International User Conference**
20-23 July 2010 *NEW*	Leicester, U.K.	**Accuracy 2010**
25-30 July 2010 *NEW*	Honolulu, Hawaii.	**IEEE International Geoscience & Remote Sensing Symposium "IGARSS 2010"** Contact: publicity@igarss2010.org
August 2010		
September 2010		
13-15 September 2010	Ghent, Belgium	**8th International Conference on Geostatistics for Environmental Applications (GeoENV 2010)**
14-17 September 2010	Zurich, Switzerland	**GIScience 2010** Full paper deadline: January 29, 2010.
15-17 September 2010 *NEW*	Skopje, Republic of Macedonia	**International Conference on Spatial Data Infrastructures 2010**
October 2010		
19-22 October 2010 *UPDATED*	Singapore	**GSDI-12 World Conference**, Theme: Realizing Spatially Enabled Societies. In conjunction with the 16th PCGIAP Annual Meeting. Abstract deadline: 1 April 2010, Book Chapter submission Deadline: 15 March 2010,
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 *NEW*	Addis Ababa, Ethiopia	**8th International Conference of the African Association of Remote Sensing of the Environment (AARSE2010)**, Contact: AARSE at dozie@ezigbalike.com.
November 2010		
1-7 November 2010 *NEW*	Hamburg University	**Call for papers: 3rd worldwide online climate conference CLIMATE 2010/KLIMA 2010** Abstracts deadline: 31 March 2010 Contact: info@klima2010.net.

8-11 November 2010	Sede Boqer Campus, Israel	**3rd International Conference on Drylands, Deserts and Desertification** For more information contact: Dorit Korine at desertification@bgu.ac.il.
December 2010		
2011		
1 January - 31 December 2011	Worldwide	**International Year of Forests, 2011**
21-25 February 2011	Nairobi, Kenya	**26th Session of the UNEP Governing Council/Global Ministerial Environment Forum**
10-15 April 2011 ***NEW***	Sydney, Australia	**34th International Symposium on Remote Sensing of Environment (ISRSE2011)** Contact: Ian Dowman, idowman@cege.ucl.ac.uk.
18-22 May 2011 ***NEW***	Marrakech, Morocco	**FIG Working Week & XXXIV General Assembly** Contact: FIG Office, fig@fig.net.
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** For more information contact: UNFCCC Secretariat at secretariat@unfccc.int.
8-12 July 2012 ***NEW***	San Diego, California USA	**ESRI User Conference**
8-12 July 2013 ***NEW***	San Diego, California USA	**ESRI International User Conference**

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