

Spatial Data Infrastructure – Africa Newsletter



SDI-Africa Newsletter

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

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



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

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

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

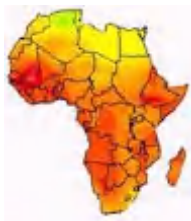


Input to this Issue

Thank you to Kate Lance, NASA/SERVIR-Africa (USA); Hussein Farah, RCMRD (Kenya); George Were Eshiamwata, BirdLife International (Nairobi) and Holly Ashley, International Institute for Environment and Development (UK) for their contributions to this issue of the newsletter.

Message from the Editor

Best wishes and happy New Year 2011 to all our esteemed readers. And thanks you to everyone who contributed news items and other geospatial information in 2010. During the last decade, Africa lagged significantly behind in terms of internet connection, but today the telecommunications sector is booming on many parts of the continent, and the projects of major international telecommunications groups are also growing. The enhanced telecommunication has brought with it inherent benefits, especially to Africa which has lagged behind in terms of ICT development and geospatial information application and research. For the year 2011, we request everyone who appreciates the content of the SDI-Africa newsletters to take a little time to share news items with the geo-spatial community, especially the concerns of Africa for upcoming issues. You just need a few minutes to send a useful URL, workshop summary, announcement of an upcoming event, or an article on research or practical implementation of GIS and remote sensing applications within your profession, organization or country. This will go along way in enhancing the gains already achieved for sustainable development in Africa through the application of geospatial technology and research. Thank you, Gordon Ojwang'.



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SDI News, Links, Papers, Presentations

[New global initiative to track changes in land cover and use launched](#)

The Deputy Secretary of the Interior David J. Hayes, co-leading the U.S. delegation to the 2010 Group on Earth Observations (GEO VII) Ministerial Summit meeting in Beijing last month (November) announced that the U.S. is launching a new global initiative aimed at developing the first-ever comprehensive and up-to-date database of 30-meter satellite imagery that will show changes in land cover and land uses worldwide. Hayes was joined in the announcement by Sherburne Abbott, Associate Director for Environment at the White House Office of Science and Technology Policy and GEO Co-Chair for the U.S. at the summit meeting where delegates from 85 countries and the European Commission attended.

“The Global Land-Cover Data Initiative aims to provide land-managers, decision-makers and communities around the globe with critical information about changes to land use and land cover,” “This type of sharing of data and technology can help us make wise decision about how best to build a sustainable future, protect our environment, and tackle challenges like pollution and climate change,” he said. More than 80 percent of the imagery for the Global Land-Cover Data Initiative can be obtained with Landsat, a satellite program operated by Interior’s U.S. Geological Survey in cooperation with NASA. Hayes asked international partners at the GEO summit to assist with developing the remaining information that would be needed for a comprehensive global land-cover database. The announcement of the Global Land-Cover Data Initiative follows another of SilvaCarbon, a separate U.S. initiative designed to strengthen global capacity to understand, monitor, and manage forest and terrestrial carbon. (See www.ostp.gov.)

Although moderate resolution global land cover initiatives have been underway for some time and have provided important synoptic global land-cover data, the proposed initiative is based on the fact that higher-resolution (30m) global land cover datasets would permit detection of land change at the scale of most human activity - where change most commonly occurs and would increase flexibility in environmental modeling. The higher resolution thus is particularly important for studies of ecosystem fragmentation and degradation and ultimately will improve the comparability of assessments conducted across the globe. The 30-meter resolution will produce several land-cover data products for the international community. The first set of products will describe the Earth’s land cover conditions as of 2010, and will include:

- A 2010 global land-cover characteristics baseline providing quantitative measures of six major land-cover characteristics - percent tree, shrub, herbaceous, surface water and wetness, snow/ice, or barren land-cover. This should be completed by December 2012.
- A 2010 global map of land-cover and land-use types - such as urban and built-up areas, agriculture, forests, grasslands, shrublands, water bodies, wetlands, snow and ice, and barren areas - using the United Nations Food and Agriculture Organization classification system. This global layer should be completed by December 2013.

Once the baselines are established, it is envisioned that the land-cover characteristics product will be updated annually and the land-cover-type map every five years. For more information on Landsat, see a [USGS report](#) and [sample earth images](#) that show environmental change.

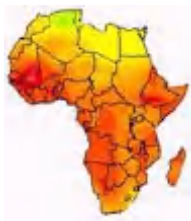
[World Bank plan to value ecosystems](#)



At the UN Convention on Biodiversity, the [World Bank launched a new program](#) aims to put a value on a country’s ecosystems in the same way a country measures its national income and product accounts, or GNP and GDP. WRI’s Janet Ranganathan and John Talberth discuss why countries need to start measuring the value of nature and the benefits and challenges of setting up national ecosystem service accounts.

Ecosystem services are the benefits that nature provides to people. Food, freshwater, timber and cotton for clothes are some of the most familiar and visible services. But there are other types of unseen services that we often take for granted, for example the ability of forests to sequester carbon and mitigate climate change and the way in which wetlands filter and purify water. What are national ecosystem service accounts and why are they needed? More Information:

- [Measuring What Matters: GDP, Ecosystems, and the Environment](#)
- [Shattering Glass Walls at the Multilateral Development Banks](#)
- [Promoting Development, Protecting Environment](#)
- [Banking on Nature’s Assets: How Multilateral Development Banks Can Strengthen Development by Using Ecosystem Services](#)



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Conventional measurements of national economic performance, such as Gross Domestic Product and Standard National Accounts, [do a poor job](#) of tracking stocks and flows of ecosystems and their services. A country can cut down its forests, drain its wetlands and pollute its water sources and none of this shows up in the national accounting system. There is therefore little incentive for better management of precious natural resources. By giving these assets a value and including them in the national accounts, the hope is that what gets measured will get managed. Current [macroeconomic decisions largely fail to account for natural assets](#), leading to decisions that degrade ecosystems. Properly accounting for natural capital stocks and ecosystem service flows is one of the lynchpins of sustainable development. All economic activity depends on the quantity and quality of underlying capital. Capital takes four basic forms: built, social, human, and natural. By maintaining our capital stocks in good condition we insure that future generations will be at least as well off as we are today. Ecosystem service accounts help advance this goal with respect to natural capital. These new accounts will also raise awareness about the value of a country's natural assets and increase public support for decisions that are better for people and nature. In the article, the following Q&A has been considered:

1. What is the connection between ecosystem services and economic development?
2. What are some of the challenges of creating national ecosystem service accounts?
3. Will this solve the ecosystem degradation problem?
4. Are any countries already doing this?
5. What should the World Bank do in its own operations to take into account ecosystems?

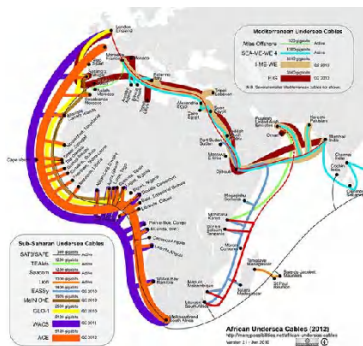
In addition to helping countries account for the value of natural assets, the World Bank itself is well positioned to systematically [integrate ecosystem risks and opportunities into its own operations](#). [Banking on Nature's Assets](#) identifies entry points for mainstreaming ecosystem services into the World Bank's core operations. These range from country assistance strategies and environmental analysis to sector work and development policy loans.

[Africa, champion in mobile payment](#)

Many Africans, who had no access to banking services, are now able to send or receive money via SMS thank to mobile phones. Mobile payment (also called Mobile Banking, MBanking, M-payment, SMS Banking) can pay for purchases, bills or allow an electronic money transfer. In Africa, this system is very successful. Its success comes from the strong growth in mobile phone use and the low level of use of banking services on the continent.

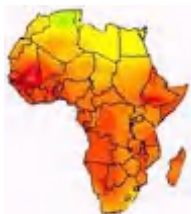
According to the UN, in 2009, 350 million Africans had a mobile phone. Meanwhile, the number of Africans owning a bank account on the continent remains very low. The World Bank estimates that less than 20% of households have access to banking services and this rate can be as low as 5% in some countries. Mobile operators are, therefore, investing in the field of mobile payment and compete with banks. They develop "mobile oriented" solutions where the operator controls the entire value chain: creating and managing payment accounts. Mobile operators also cooperate with banking institutions through partnerships. These "bank oriented" offers (i.e. where the bank is responsible for creating and managing accounts and the telecom operator's data transport) propose their subscribers consulting accounts, local money transfer and paying bills via mobile phone. According to a study by the Association of European Financial Management and Marketing, for 88% of bankers surveyed and 66% of clients, account management will be done through the Mobile Banking in Europe in future years.

[Africa is developing an extensive submarine telecommunication network](#)



During the last decade, Africa lagged significantly behind in terms of internet connection. Today, the telecommunications sector is booming on the continent and the projects of major international telecommunications groups are growing. Five undersea cables that will link African countries, like Ghana and Kenya, with Europe and India are under construction. Some are already operational. With a budget of over \$2.5 billion, these computing motorways will strengthen the capacity of the exchanged data on the web at more than 16 terabits per second in 2012.

- In 2009, after the inauguration of Seacom, the very first submarine cable of optical fibers connecting the East Africa to Asia and Europe, the continent celebrated the arrival of a new pipe on its west coast. Offering an alternative to cable Sat 3, Glo1 will double Nigeria's connection as



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well as the connection of sixteen other countries, bordering with the old continent. Seacom and Glo will allow future local operators to develop the broadband Internet, primarily in the coastal cities of the continent. Until then, the East African, for example, will only have about 0.07% of international bandwidth.

- On 8th June 2010, France Telecom announced that it had signed an agreement with nineteen partners in the telecommunications industry in order to build a submarine cable between Europe and Africa. This will enable a score of West African countries to have access to broadband Internet. "By signing this agreement, France Telecom-Orange strengthens its presence on the African continent and helps reduce the digital gap in this region of the world." This new fiber optic cable, long 17,000 km, will link France and South Africa, and will be operational in the first half of 2012. Twenty-three countries will benefit from it, including Spain, Portugal, Mauritania, Guinea, Ivory Coast, Gabon, DRC, Angola. Mali and Niger, which do not have access to the sea, will be connected via a terrestrial cable. The cable ACE construction (Africa Coast to Europe) represents, for twenty operators grouped in the consortium, an investment of about \$700 million (587 million Euros), including 250 million at the expense of France Telecom.

The countries that are building new broadband networks will benefit from cheaper broadband access. On some African markets, the Internet access currently costs up to \$100 per month. This is why the African market is the most expensive market in the world. Already, in Kenya, the price of a megabit connection dropped by 80% compared to 2008. Africa is about to catch up in terms of ICT development.

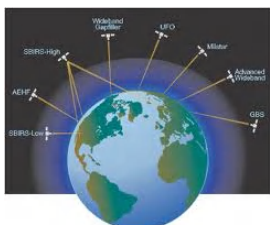
[Africa 'needs practical advice from climate scientists'](#)



Scientists are failing Africa in its attempts to adapt to climate change, a conference was told. According to Anthony Nyong, manager of the Compliance and Safeguard Division at the African Development Bank, scientists spend too much time collecting data and attending conferences, and not enough time providing practical solutions that local people can implement. For instance the African Centre of Meteorological Application for Development, based in Niger, regularly collects data on drought. Yet the main need of people whose livelihoods have been devastated by droughts is knowledge on how to cope, he said.

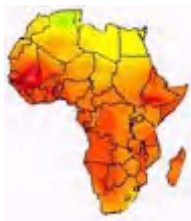
Governments and donors were also to blame for failing to integrate climate adaptation plans into development programmes or to take account of local knowledge. They also squander large sums of money on conferences instead of spending it in the field, he told the UNEP-Stockholm Environment Institute (SEI) Climate Change Adaptation Collaborative Programme meeting on 11 October. Nyong urged scientists to redirect some of their energies from collecting data and producing information to transforming this information into knowledge that could help African people cope. "85 per cent of the money coming to Africa for adaptation is used for 'capacity building' [meetings] in hotels - yet nobody has ever built capacity in a hotel," he told the meeting, which preceded the Seventh Africa Development Forum: Acting on Climate Change for Sustainable Development in Africa, held by the UN Economic Commission for Africa (12-15 October). "If Africa is to adapt then it must change the way it is doing things," he said. "When will African governments do real work on adaptation and not just pilot projects by scientists," he asked, claiming that there have been ten years of such activities with little to show for them. But Dickson Nyariki of the South Eastern University College, in Kenya, said the collection of data was important because it was needed to understand particular phenomena and climate change was no exception. He also defended pilot projects, saying they help make issues clearer. "Pilot projects are important in areas where there are no clear procedures and information is also unavailable," he added.

[Five African countries harmonize telecom management](#)



Four West and one Central African countries - Benin, Burkina, Mali, Niger and Chad have just endorsed a document on the coordination of radio-electric frequencies in a bid to manage their telecommunications and particularly their radio-communications. Gathered in Niamey under the aegis of the Niger multi-sector regulation Authority (ARM), representatives from these countries have spent three days assessing the current technology and communication development as well as the increasing applications for radio-electric frequencies "Though the spectrum of radio-electric frequencies is reusable, it is a limited source that needs to be soundly managed",

the caretaker chairman of the Niger national regulation Council, Pereira Charafadine explained. These five countries seek, he said, to jointly endorse and sign a document on the coordination and sharing of



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frequencies at their common borders, in line with the Article 6 of the Telecommunication Regulations stated by the International Telecommunications Union (ITU).

In July, Niger adopted a national plan meant to conform the country to international standards and provide a framework conducive to an economic growth and a range of services as well as the use of frequencies. The radio-electric spectrum is part the state-owned property and its use by each country befall on its sovereignty domain, but the exercise of such sovereignty cannot prevail to the detriment of others whereas the propagation of electromagnetic waves transcend national boundaries and often cover larger areas in the globe”, Pereira Charafadine stressed.

Seven other West African countries signed a similar agreement in August 2009. Globally, countries have teamed up to better coordinate their telecommunications and particularly their radio-communications, through the endorsement of a radio-communication legal framework.

[Nigeria, Russia to strengthen cooperation in space, nuclear technology](#)

Nigeria and Russia are to strengthen their cooperation in space technology, nuclear energy and partnership in other technical fields, Nigerian minister of Foreign Affairs Odion Ajumogobia announced on Thursday in Abuja at a joint press conference with his visting Russian counterpart Sergey Lavrov. Ajumogobia noted that since 1960 Nigeria and Russia had maintained very cordial and excellent relations. “We want to take our relations to a higher level in terms of economic cooperation, with a view to promoting sustainable development,” he said.

Ajumogobia explained that the partnership in the fields of nuclear energy, and outer space was for peaceful purposes and was aimed at addressing the nation’s energy crisis. He also said that cooperation in space technology would help Nigeria to launch its satellites, using Russian rockets, adding that economic cooperation between Nigeria and Russian companies would be strengthened.

Similarly, Lavrov, who spoke through an interpreter, assured Nigeria of the safety of the experimental nuclear plant his country was helping to install in Abuja, saying that the international nuclear protocols would be strictly adhered to. The two nations in 2008, signed a Memorandum of Understanding (MoU) on energy partnership between the NNPC, and Russian’s GAZPROM. Also signed, was a nuclear agreement between the Nigerian Nuclear Regulatory Authority and the Russian State Atomic Corporation, to explore and exploit gas and develop hydrocarbon-related projects in Nigeria.

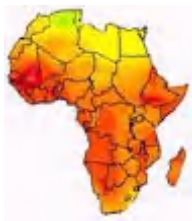
[Nigeria set to contain flooding from Lake Nyos in Cameroon](#)

The Nigerian government is working out “robust” plans to deal with any unforeseen emergency in the event of the collapse of Lake Nyos in neighbouring Cameroon. Nigeria’s Minister of Water Resources, Chief Obadiah Ando, told journalists in Abuja that the Kashimbilla Dam being constructed by the government would serve as buffer to prevent the waters from the lake flooding into Nigeria. He said the construction of the Kashimbilla/Gamovo multi-purpose dam was top priority and that N17 billion (US\$130 million) of the contract sum of N42 billion (US\$ 300 million) had been paid to the contractor handling the project.

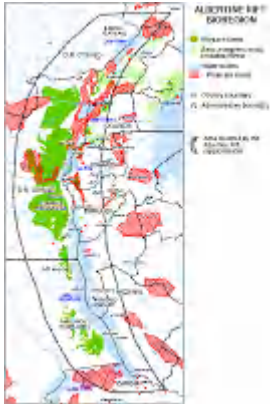
“From March to November, we have paid the sum of N13 billion (US\$ 100 million) to the contractor in addition to the four billion earlier paid and the progress of work is encouraging. “Also, early warning systems are being installed at the project site to alert the communities within a few minutes of any unusual rise in wave in the dam reservoir as well as the river downstream of the dam. “So far, one of the early warning devices has been installed on River Katsina Ala at Kashimbilla. “Other units of the system are required along Rivers Katsina Ala and the Benue down to the Niger at Lokoja,” Ando said.

He expressed dissatisfaction over the reports suggesting that Lake Nyos was breaking while reacting to media reports that the volcanic rock holding the waters of the lake might soon collapse due to seismic activities. He said that the United Nations gave a period of between five and 10 years for the lake to collapse, adding that the Nigerian government still had time to deploy adequate measures to prevent the disaster. “We are working with the relevant stakeholders to address the issue. “The ministry is collaborating with the National Emergency Management Agency (NEMA) and other major relevant stakeholders on disaster risk reduction and management. “The riparian states of Taraba, Benue, Cross River, Kogi, Delta, Anambra and Imo had been advised to assist in the procurement and installations of some early warning devices in their environment,” Ando said.

[Albertine Rift institutions commit to biodiversity data sharing](#)



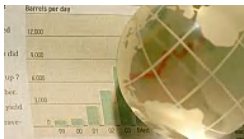
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A regional MOU on the collaboration of biodiversity data and information sharing in the Albertine Rift region was signed today 20th October 2010 in Kampala, Uganda, by the heads of leading institutions in biodiversity research and monitoring in the Albertine Rift.

For the last 8 years and with funding support from The John D. and Catherine T. MacArthur Foundation, the [Albertine Rift Conservation Society \(ARCOS\)](#) has been facilitating a regional mechanism for biodiversity data management, sharing, and reporting. The ceremony involved national data centres from Burundi (University of Burundi), DRC (Centre National de Recherche en Sciences Naturelles – CRSN), Tanzania (Tanzania Wildlife Research Institute - TAWIRI) and Uganda (Makerere University Institute of Environment and Natural Resources – MUIENR), as well as the Albertine Rift Conservation Society as Regional Coordinator. [Read more.](#) [Source: Servir Community Blog]

[Poverty and Ecosystem Services in East Africa: Increase effectiveness of poverty reduction efforts through spatial analysis of ecosystem services](#)



Policymakers will understand and act on linkages between poverty and ecosystem services and improve implementation of national strategies and plans. The poverty and ecosystem services mapping project aims to overcome three major barriers to sustaining ecosystem services and creating economic opportunities for poverty reduction:

- Lack of relevant information on the connection between ecosystem services and human well-being;
- Narrow focus of institutions on their mandates making it difficult to work across sectors and professional, geographic, and political boundaries;
- Limited use of poverty-ecosystem services information in policy formulation and development debates.

The project builds on established partnerships in East Africa that seek to influence the implementation of poverty reduction strategies and change environmental reporting by developing geospatial indicators of ecosystem services and poverty. Over the past years, the WRI have: Brought together national and international institutions working on poverty, agriculture, biodiversity, water and other ecosystem services. These include key stakeholders on environmental reporting and implementation of poverty reduction strategies; Compiled, shared, and made use of new remote sensing and poverty data in addition to GIS experiences and data holdings built over the past decade by these institutions.

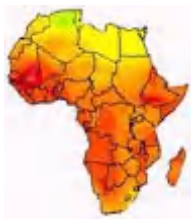
To sustain ecosystem services and create economic opportunities for poverty reduction through better management of ecosystems, WRI will employ a five step strategy. The final selection of activities aimed at boosting the use of the maps and data will depend on resources available and most importantly on more specific ideas and requirements coming from country partners.

- Complete and release Uganda report
- Disseminate new poverty and ecosystem service maps to targeted groups and expand the user network in Kenya and Uganda
- Work with government and civil society in Kenya and Uganda to increase the likelihood that development decisions will incorporate information from the new poverty and ecosystem services maps. With country partners, WRI will engage key stakeholders in government and civil society to adapt the maps into a specific policy or decision-making context.
- Evaluate the usefulness of the new maps within Kenya and Uganda and identify actions to support their long-term production and use
- Share Kenya and Uganda experiences and initiate similar mapping activities in Africa

[Kigali One Stop Centre, a model for Geospatial integrated service in city planning](#)



The experts are busy. Some are attending to clients trickling at intervals, while others are scrutinizing a pile of documents submitted by people seeking [construction permits](#). These architects, [engineers](#), [surveyors](#) and environmentalists who used to be scattered in different parts of Kigali, are now assembled at [Nyarugenge District Hall](#) where they are under one roof to handle 'big' developers. The team issues permits for all buildings of two levels and above, sites where 100 people are to be accommodated. The team is also charged with handling sites of 1000 meters squared. The smaller ones, especially residential



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houses and commercial buildings are now handled by Nyarugenge, Kicukiro and Gasabo districts.

This, according to Emmanuel Nyamurangwa, the Administrator at Kigali City Construction One Stop Centre, has reduced the backlog of files that had accumulated at districts. Figures from the one stop centre show that on average seven construction permits are issued monthly, three times more than the previous two permits the Kigali Construction Review Commission used to issue per month. And in the six months of operation, Nyamurangwa, says at least 195 projects have been received, 30 have been approved, 41 construction permits have been issued, seven projects are pending and four are yet to be analyzed. In total, the Kigali Construction One Stop Centre has registered projects worth about Rwf 219 billion. Projects worth Rwf193 billion are ongoing, while projects valued at Rwf26 billion are yet to take off. All the progress has been made since April 15, 2010, when the centre opened, to October 26, 2010.

“The speedy handling of developers will help us transform Kigali into a modern planned city in a short time,” Dr Aisa Kirabo Kacyira, Mayor of Kigali City Council says. She promises to reduce the time further with more capacity to handle construction related issues. The one-stop centre comes in place after complaints from real estate developers that there were delays in processing documents by district officials. The unacceptable delays slowed construction projects in the city to take off. In protest, it is reported some investors would withdraw injecting their money in real estate slowing the economic growth and investments. For more information, visit: [Independent](#).

Lusaka Agreement approves Wildlife Enforcement Monitoring System



On 6 and 7 September 2010, the Director of the Task Force, Mr. Bonaventure Ebayi lead a delegation that included a LATF Communication Assistant and a Database Assistant officer from KWS to a meeting with officials of the Faculty of Geo-Information Science and Earth Observation (ITC) of the University of Twente and the United Nations University in Enschede the Netherlands.

The objective of the meeting was to plan on a joint project between the Task Force (LATF), ITC and United Nations University in research collaboration and development and implementation of Wildlife Enforcement Monitoring System (WEMS) in Africa. The WEMS system will link producing countries and consumers through monitoring of illegal trade/trafficking, thus Lusaka Agreement Task Force will utilize the system to effectively track the trade and also add value in building capacity of its member states in the modern techniques to curb illegal trade in wild fauna and flora. A pilot project will be conducted with Parties to Lusaka Agreement and extended to other African countries thereafter.

Plans are underway for the three institutions to formally enter into a tripartite Memorandum of Understanding (MoU) as a basis for effective implementation of WEMS in Africa. Co-operation and inter- institutional collaboration are key factors to success in addressing transnational challenges.

In October, a two-day meeting was held with Ministers, members of the Bureau of the Governing Council of the Parties to Lusaka Agreement, where WEMS-Africa Implementation and the signing of a tripartite cooperative agreement or MoU between LATF, ITC and the UN University were considered and approved by the Council among others projects. There is now a formal go ahead and the Parties interested in Phase I, Kenya, Uganda and Tanzania were represented at the meeting and they expressed their willingness to collaborate fully in the implementation of the project. Further information can be found on the [LATF website](#).

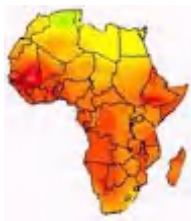
Index-based livestock insurance project wins best practice award



The International Livestock Research Institute (ILRI) led Index-based Livestock Insurance (IBLI) project in northern Kenya, which provides livestock insurance to over 2000 households in Marsabit district to help livestock herders sustain their livestock-dependent livelihoods during drought, has received a best-practice award from the Poverty Reduction, Equity and Growth Network in recognition of the project's innovative approach of combining scientific research and practice.

The award was presented during the Poverty Reduction, Equity and Growth Network's conference 'Policies to Foster and Sustain Equitable Development in Times of Crises' held in Midrand, South Africa, on 2-3 September 2010.

Over the past two years, ILRI in collaboration with partners from Cornell University, the BASIS I4 project at the University of California – Davis, and Syracuse University, have come up with a research program that has designed and developed the insurance program. It is now being implemented by commercial partners as a market-led index-based insurance product that is protecting livestock keepers from



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drought-related animal losses particularly in the drought-prone arid and semi arid areas of Kenya. The program uses satellite imagery to determine and predict potential losses of livestock forage and issue insurance payouts to participating members when incidences of drought occur.

The first pilot product of this project, launched in January 2010 in Marsabit, brings together Equity Bank of Kenya, UAP Insurance and Swiss-Re as commercial partners who are running a commercially viable insurance product. This is a first-of-its-kind initiative in Africa and it holds enormous potential for benefiting livestock keepers in the region and across the continent. So far, the project has recorded over 2000 contracts covering livestock worth over US\$1 million and attracting premiums of over US\$77,000.

The impact of the project is currently under assessment to find out its benefits before it can be scaled up to other districts in the country. More information about the Index-based Livestock Insurance project can be found on the project website: www.ilri.org/ibli/. The following ILRI news article shares information about the project's launch in Marsabit: <http://www.ilri.org/ilrinenews/index.php/archives/1440>. More about the Poverty Reduction, Equity, and Growth Network's 2010 conference: <http://www.pegnet.ifw-kiel.de/>.

South Africa: Square Kilometre Array (SKA) Project on Track

The Department of Science and Technology has confirmed that plans for the Square Kilometre Array (SKA) project are firmly on track. Minister Naledi Pandor made the announcement in Parliament while responding to a Democratic Alliance (DA) MP question regarding spending on the programme. Pandor said for a project of this scale, adjustments in projected flow had to be factored in from time to time. "The rescheduling of 2010/11 expenditure to 2012/13 and beyond is a responsible planning response to ensure SKA benefits from evolving development and telescope redesign," Minister Pandor said. She reiterated that funds for the programme were not being cut, as thought by the DA. The adjustments, according to the department, are needed to ensure that the prototype of the SKA, the MeerKat, is closely aligned to the design requirements of the full SKA.

The SKA is a multi-billion rand international radio telescope that will be between 50 and 100 times more sensitive than any such instrument ever built. South Africa and Australasia are competing to host the SKA, the construction of which is expected to cost about 1.5 billion Euros. The international science funding agencies and governments involved in the international SKA consortium are expected to announce the winning bidder in 2012. South Africa has partnered with several other African countries - Botswana, Ghana, Kenya, Madagascar, Mauritius, Mozambique, Namibia and Zambia - in the bid to host the SKA. The SKA is the largest radio astronomy project ever undertaken by South Africa.

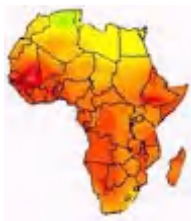
Call for Expression of Interest to Host AARSE 2014 and Future Conferences



The [African Association of Remote Sensing of the Environment](http://www.aarse.org) (AARSE) was founded in 1992 and incorporated as an international NGO under Section 21 of the South African Companies Act (Act 61 of 1973). AARSE conducts biennial (once every two years) international conferences across Africa apart from other awareness and capacity building activities. Up to 2010, AARSE has organized conferences in Harare (Zimbabwe) in 1996, Abidjan (Cote D'Ivoire) in 1998, Cape Town (South Africa) in 2000, Abuja (Nigeria) in 2002, Nairobi (Kenya) in 2004, Cairo (Egypt) in 2006, Accra (Ghana) in 2008 and Addis Ababa (Ethiopia) in 2010. The 9th conference will take place in the last week of October 2012 in Morocco (watch out for the conference website www.aarse2012.org before the third quarter of 2011). The respective themes of these conferences were as follows:

- The Application of remotely Sensed Data and Geographic Information Systems (GIS) in Environmental Resources Assessment in Africa;
- Lessons of Experience and the Way Forward for Integrated Development and Application of Remote Sensing and GIS for Sustainable Development in Africa;
- Information for Sustainable development;
- Geo-information for Sustainable Development in Africa;
- The Role of Geo-Information Technologies (GIT) in the New Partnership for African Development (NEPAD);
- Geoinformation Sciences & Earth Observation in Support of Africa's Development;
- Earth Observation and Geoinformation for Governance in Africa; and
- Earth Observation and Geoinformation for Africa's Development Agenda

AARSE is inviting expression of interest from national institutional members and other organizations/agencies in Africa for the hosting/organization of the 10th Conference of the Association in



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2014 or other future editions of the conference. The conference is usually held in the month of October (of every even-number year).

The bidding/declaration of interest should clearly indicate the name of (leading) organization including history of the organization and statement of previous hosting of international conference(s) of similar magnitude; Names of supporting organizations in the country supported by letters of intent from such organizations; Venue (city) of the conference; Strength of AARSE membership as well as geo-information activities in the country; Other useful information.

It should be noted however that AARSE does not provide funds for the hosting organization but the Association can and will solicit for funding on behalf of the organization towards a successful hosting of the conference.

Declaration of interest should be sent to: Prof. Harold Annegarn, Secretary General, African Association of Remote Sensing of the Environment (AARSE), AARSE Secretariat, 54 Motor Street, Westdene, Johannesburg, Gauteng 2092, South Africa. hannegarn@gmail.com. With a copy to: Prof. Jide Kufoniyi, President, Department of Geography, Obafemi Awolowo University, Ile-Ife, Nigeria. Jide.kufoniyi@aar-se-africa.org.

[Guide to the UNFCCC Negotiations and Summary for Policymakers](#)

ÉcoRessources has announced the publication of a Guide to the negotiations on climate change, as Parties prepare for the Cancun conference. The Guide was written for the Environment and Energy Institute of the Francophonie (IEPF). The Guide is available both in French and English. The Guide analyzes post-2012 issues that are determinant to reaching a global agreement and discusses the expectations for the Cancun Conference. The guide also examines issues related to the current regime, including technology development and transfer framework as well as adaptation. A [summary for policymakers](#), which synthesizes the guide, is also available.

Le guide et le résumé sont aussi disponibles en français:

- [La version française du guide des négociations est disponible grâce à ce lien](#)
- [La version française du résumé à l'intention des décideurs est disponible grâce à ce lien](#)

For further information, contact : Caroline De Vit, ÉcoRessources Consultants at 1097, rue Saint Alexandre, #201, Montréal (QC), Canada H2Z 1P8. Email: caroline.devit@ecoressources.com.

[Call for Papers: Participatory Learning Action \(PLA\) Special issue on Youth and Participatory Governance in Africa](#)

IIED and Plan UK in collaboration with the Institute for Development Studies (IDS) seek the submissions from adults and young people working in the field of youth and participatory governance who would like to contribute an article to this special issue. Contributions may focus on (but not be limited to) the following areas:

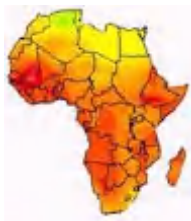
- Engagement of young people in policy, planning and budgeting processes at local, national, regional and international levels;
- Engagement of young people with oversight actors, including the media, parliament, and civil organisations;
- The role of youth organisations, networks, and movements in relation to both broader civil society and the state; and/or
- The use of ICT and mobile technology by young people to engage in governance processes.

Submit a short summary (500 words or less) of what you would like to write about to jessica.greenhalf@plan-international.org by 5 December 2010. Summaries will be reviewed by a panel in December and a maximum of 12 contributions will be selected. Authors will be invited to participate in a writeshop to be held in Nairobi, March 2011. All participant costs (e.g. flights, visa, food and accommodation etc.) relating to the workshop will be covered.

Practical SDI implementation materials from within and outside of Africa

[Remote sensing alone is insufficient for quantifying changes in forest cover](#)

A recent [PNAS](#) article estimated global gross forest cover loss. Figure 1 in ref. 1 and the conclusions drawn from both refs. 1 and 2 leave the impression that tree cover losses in the southern United States are no different from deforestation activities elsewhere around the globe. Results from the Forest Service's Forest Inventory and Analysis (FIA) program depict a different, and we think more accurate, assessment of forest



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conditions in the southern United States, because field plots are used to validate satellite interpretations and distinguish between land cover and land use changes.

Since the 1940s, FIA has combined information from remotely sensed imagery (in the early days, aerial photography; today, LANDSAT ETM+ and MODIS imagery) with spatially coregistered data collected on ground plots (125,000 across the United States) to track changes in land use and land cover over time. In the south, fresh imagery is interpreted, and the same ground plots are revisited every 5 years. This system of paired remote sensing and ground observation confers four distinct benefits: (i) field visits validate imagery interpretations, significantly improving the accuracy of inventory statistics for both land cover and land use changes; (ii) field visits help identify where young tree seedlings are established before they are discernible on satellite imagery; (iii) repetition provides solid trend data; and (iv) changes in tree cover vs. forest land use are clarified.

A major shortcoming in ref. [1](#) is that the analysis is one-sided, reporting only on gross loss of tree cover over a single 5-year period. Because of absent equivalent data on gross gain in tree cover over the same time period, the net change in land cover cannot be estimated. Contrary to the authors' assertion that net changes are relatively unimportant, our experience, both domestically and internationally, is that the trend of net change over time is particularly important to interest groups and policy makers ([1](#)). The study by Smith et al. ([3](#)) is the latest of nine detailed national FIA reports dating back to 1953 chronicling changes in forests - both as land cover and land use. Forest area in the southern United States was essentially unchanged from 1997 (214.1 million acres) to 2007 (214.644 million acres), bracketing the period used in ref. [1](#). Furthermore, net volume of all trees south-wide increased 12% between 1997 and 2007 (256.3 - 288.5 billion cubic feet), even after all losses from both natural and human-caused events are counted. These statistics present a more holistic picture of forest conditions in the southern United States than the picture emerging from refs. [1](#) and [2](#). Southern forests are being replenished and are growing well.

Although we use before and after LANDSAT data to estimate losses from disturbances, such as large fires ([4](#)), we recognize the importance of also characterizing recovery trends with remote sensing data (e.g., MODIS) ([5](#)) and field visits. This more thorough approach better characterizes disturbance and recovery than the approach used in ref. [1](#). The United Nations Food and Agricultural Organization have endorsed the principle of validating satellite-derived estimates with ground-plot data or finer-resolution imagery.

GIS Tools, Software, Data

[IFPRI releases two new climate change datasets](#)

The International Food Policy Research Institute (IFPRI) recently released two new data sets - the [Ethiopia Nile Basin Climate Change Adaptation dataset](#) and the [South Africa Limpopo Basin Climate Change Adaptation dataset](#).

[World wide Internet Filtering map](#)



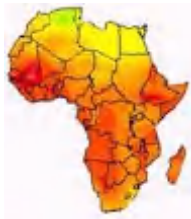
In [Interactive mapping](#), applications from a census done by Open Net Initiative from universities of Havard, Toronto, Cambridge and Oxford showing the status of internet censorship across the world. Data for Africa available are for [Nigeria](#), [Ethiopia](#), [Sudan](#), [Egypt](#), [Zimbabwe](#), [Tunisia](#), [Algeria](#), [Uganda](#) and [Morocco](#) factors or indicators studied are [social](#), [political](#), [internet tools](#) and [security](#).

According to the New York Times of 16 November 2010 Google has released a policy paper contending that countries that limit internet user's access to information outside their borders violate their world trade organisations [WTO](#) commitments but didn't mention its rival Baidu search engine performing very well on Chinese market and the paper highlight all challenges across countries all over the world in access to information via internet. For more visit the dynamic maps at [ONI](#).

[Flood Manager E-learning](#)



The Associated Programme on Flood Management (APFM) and the University of Technology Hamburg - Harburg (TUHH) jointly developed the Flood Management E-learning website. The Flood Manager E-learning is a web-based platform that provides the public with the state of the art knowledge in understanding and implementing Integrated Flood Management (IFM). It also offers users opportunities to get exposed to the interdisciplinary



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aspects of flood management that enable them to interact confidently with specialists in these fields. The E-learning platform is structured in three main parts:

- The Tutorial section is the core of the E-learning platform. Users get in-depth information on the main components of sustainable flood management. Each of the following components provides users with the objectives and methodology as well as examples of related projects and their assessment.
- Integrated Flood Management (IFM): Policy and Planning Aspects; Flood Probability Assessment; Flood Risk Management; and Flood Management Plans
- The Knowledge Base section offers users direct access to basic information about the most relevant topics of IFM. A part of major concepts explained in the Knowledge Base are: Risk Assessment; Flood Management Measures; Flood Vulnerability Assessment; Flood Probability Assessment; and Flood Damage Assessment.

[Africa Analysis: The benefits of open source software](#)



Restrictive academic software can be a pain. The message "please do not hog the Mathematica licence" greeted anyone logging onto the mathematics department's website in a prominent UK university a few years ago. Mathematica - a computational software package developed by Wolfram Research, a private company, is widely used by academics. But it can set a department back US\$1000 per licensed copy, so it is not surprising that researchers jostle to use it. What may be an eye-watering expense at a top Western institution becomes a full-on barrier at a poor African one. Few institutions on the

continent can afford proprietary science software. And that leads to rampant software piracy.

But software piracy is becoming unnecessary. Open source software packages are becoming as user-friendly and adding as many features as proprietary packages - even in scientific circles. Open source software is usually free and differs from proprietary software (such as Microsoft Office) by publishing its source code, has come of age. The open source web browser, Firefox, has almost a quarter of the world market, according to online technology news site *Ars Technica*.

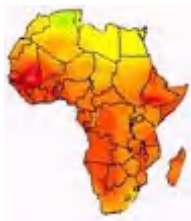
In science, open source software users are still a minority, but such programmes are no longer the exclusive preserve of those who love to tinker with computers. In maths, the [SAGE programme](#) is gaining ground. In chemistry, the [Blue Obelisk group](#) provides a range of open source chemical informatics software. Open source software also exists for physics, bioinformatics, finance and geographical information systems (GIS). "The open source stuff is generally better," says Rob Beezer, a mathematics professor at the University of Puget Sound in Tacoma, Washington.

Cash-strapped African universities could be fertile ground for such open source packages, yet few academics know they exist. The African Institute of Mathematical Sciences (AIMS) in Muizenberg, South Africa and a leader in open source software adoption runs SAGE on computers loaded with the Linux open source operating system. Coupled with Open Office and other free software packages, it saves the institute over a hundred thousand South African rand per year. Open source also invites the users to adapt the software to their own needs. This can improve IT and programming skills that in turn promote innovation. "It's a catalyst for development," says Groenewald. And in countries where bandwidth is a problem, users can run SAGE from a web interface without downloading the programme.

So why hasn't open source science software reached more Africans?

Barriers include a lack of advocacy, poor internet connectivity and aggressive marketing by proprietary software companies, says Mixo Shiburi, a senior software developer and researcher at South Africa's Council for Scientific and Industrial Research (CSIR).

- Many African governments and intergovernmental organisations, including the African Union, want to promote open source programming and software. But the political support rarely filters down to institutional level.
- What is needed is an awareness campaign, perhaps driven by researchers themselves, to raise the visibility of open source software at the coalface of African science. Research funders should also come onboard, so that they can encourage applicants to use open source packages where suitable.
- Wider uptake of open source science software, especially to train young academics, would not only halt software piracy, it would also train a new generation of tech-savvy programmers able to modify software to meet the needs of African researchers, governments and even businesses.
- Faster internet connection and mobile internet technology is helping African researchers onto the information age bandwagon - open access software will allow them into the driving seat.



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Africa should embrace open source scientific software, cutting costs and boosting IT skills across the continent, argues Linda Nordling, who is based in Cape Town, South Africa, and specializes in African science policy, education and development.

[The R Project for Statistical Computing](#)

R is a free software environment for statistical computing and graphics. It compiles and runs on a wide variety of UNIX platforms, Windows and MacOS. To [download R](#), choose your preferred [CRAN mirror](#). For questions about R like how to download and install the software, or license terms, read the [answers to frequently asked questions](#).

R version 2.12.0 was released on 15 October 2010. The source code is first available in the [directory](#), and eventually via all of CRAN. Binaries will arrive in due course (see download instructions). Also available is the [R Journal Vol.2/1](#).

Geospatial Research, Applications, Reference Material

[Participatory land-use planning empowers pastoral community of Kenya's Kitengela Maasailand](#)



ILRI planned to map out the Kitengela rangelands to find out how the sub-division of communal lands into private plots and subsequent fencing had affected herders and livestock productivity in the area. The mapping initiated by ILRI and the Kitengela community sought ways the community could best use the land for both domestic and wild animal enterprises. 'One of the most important considerations in the project was to come up with solutions that would not compromise the wildlife migratory routes while also helping to improve Maasai livestock herding,' says

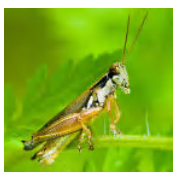
Mohammed Said, a scientist at ILRI and one of the leaders of the project. 'We explored various innovative ways of helping the Kitengela community best use their land for both livestock and wildlife,' he adds.

Most of the mapping was started by ILRI's Mohammed and Shem Chege who are graduates of the faculty of Geo-information and Earth Observation (ITC) of the University of Twente in Netherlands. In partnership with the Africa Wildlife Foundation and the local community, ILRI extended a process of mapping using GIS technology to record spatial information about the Kitengela rangelands. Community members were trained in the use of global position satellite (GPS) devices to map the locations of fences, water sources, roads and open pasture land. 'The decision to involve the community is one of the key strengths of this project,' Said added. 'We trained over 20 community members on how to use GPS equipment and systems to collect information that was then compiled. This built local ownership. The community realized that their contribution was just as important as that of the researchers.'

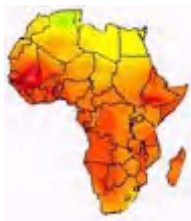
Four years after the start of this participatory mapping project, conducted with the help of GPS, some 2000 sq km of the Kitengela plains have been mapped. These maps and other outputs of the project have been shared with the local herders and farmers. The local county council of Olkejuado has adopted the projects findings and maps. The Council will use these to guide future land use in Kitengela's wildlife-rich rangelands. A scheme to pay the local herders and farmers to keep their land open has been established. Such herders and farmers get US\$4 for every acre of unfenced land. More than 30,000 acres of land are now under lease in this scheme and it is expected that this will double by the end of the year. The community is earning about US\$120,000 each year from their land conservation efforts.

The experiences and lessons of this project are now being applied elsewhere. One of the partners in the project is piloting a similar model to map land use in the Maasai Mara Game Reserve. A project in Tanzania conducted with ILRI and the United Nations Food and Agriculture Organisation is encouraging local people to map their own land for better management of their livestock and wildlife resources.

[Madagascan scientists warned of locust swarms](#)



The locust swarms that devastated crops in Madagascar last summer were predicted by the country's scientists several months in advance, but lack of government intervention meant control measures were not taken in time, they have said. "We warned the government [as early as February] the locust invasion would be out of control by August - September if there was no concrete intervention in the field," said Rado Solohery Ramboa, chief of the administration and finance department at the National Anti-Locust Center (CNA), which gathers data on factors that affect locust swarm formations. But the government froze the budget for the centre's work for the first part of the year, due to socio-economic problems following the coup in March 2009.



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Since May, Madagascar has suffered locust invasion swarms of billions of insects. Around 120,000 hectares of crops in the south of the country and hundreds of hectares in the central highlands were destroyed in August alone, according to the CNA. The swarms also disrupted field studies, delaying agricultural research, Yvonne Rabenantoandro, science director at the National Centre of Applied Research for Rural Development (FOFIFA), based in Antananarivo, told *SciDev.Net*. But they also enabled researchers to update the locust alert system, learn more about the biology of locusts and push on with the development of biological control of the pests.

Since January 2006, FOFIFA, the Agricultural Research for Development (CIRAD) centre, based in Paris, France, and the International Centre of Insect Physiology and Ecology (ICIPE), based in Nairobi, Kenya, have been studying different fungi that could biologically control the locusts. The centres have developed an efficient new biopesticide from *Metarhizium anisopliae* var. *acridum* (SP9), an indigenous species of fungus from Madagascar, scientists said. The compound is undergoing authorization for use in controlling locust swarms and, if approved, could help cut the costs of importing pesticides.

The UN Food and Agriculture Organization also warned in early August of the potential for swarms to reach plague proportions unless urgent control measures take place and have since been working with the organisations in Madagascar to control the swarms. "We need to better understand how and why swarms form, and develop better predictive measures," Iain Couzin, an evolutionary biologist at Princeton University, United States, told *SciDev.Net*. "But prediction has to be backed with sufficient resources to take preventative action."

[Tracking Wild Dogs using GPS Technology](#)

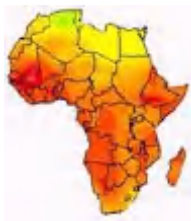


Wild dogs (which include Dingoes, feral dogs and their hybrids) are declared pests in most states of Australia. Global Positioning System (GPS) technology has been used to track the movement patterns and interactions of wild dogs in forests in south-east New South Wales, north-east Victoria and Gippsland. This study is being run in partnership with State Forests NSW, the Australian Hydatid Control and Epidemiology Program, the Victorian Department of Primary Industries and DSE.

Thirty-five wild dogs have been fitted with collars containing a GPS unit and conventional VHF transmitter programmed to collect data at regular intervals throughout the night and day. This information is sent to researchers via the [Argos satellite network](#). Transmitter data indicates that wild dogs stay within their territories, and in general don't make a special effort to travel long distances to reach agricultural enterprises such as sheep grazing. This dispels the assumption that wild dogs target these areas. It appears that wild dogs have at least two distinct behavioural modes, 1) encamped; where they move over relatively short distances and make many sharp turns, and 2) exploratory; where movements are longer in distance and more direct. Territories of the wild dogs tracked ranged from 10 km² to over 150 km². A small number of individuals tracked moving hundreds of kilometres, most likely in search of a new territory. Mathematical models are currently being used to try to identify how certain landscape features influence habitat use and movement by wild dogs. This will improve the capacity of land managers to limit the impact of wild dogs on agricultural communities, and increase our understanding of their role in the ecosystem. The GPS method of tracking has the potential to provide information on a range of aspects of wild dog ecology in a short period of time and is relatively cost-effective compared to the alternative method of ground based radio-tracking. For further information contact: alan.robley@dse.vic.gov.au.

[Spatial Data Infrastructures - More than directives](#)

Due in large part to the success of the Open Geospatial Consortium (OGC) and its members in developing standards and promoting interoperability, it is now much easier from a technology standpoint to share spatial data across and between government entities. However, the lack of a consistent and transparent legal and policy framework for sharing spatial data continues to be an additional roadblock in successfully implementing national or regional spatial data infrastructures (SDIs), such as the Infrastructure for Spatial Information in the European Community (INSPIRE). Undoubtedly, there is more work to do to ensure technical compliance with the INSPIRE directive and the associated implementing rules. However, technological improvements do not take place in a legal and policy vacuum. The legal and technical communities also must work together to help lawyers representing government agencies better understand spatial technology and how existing national laws, policies and regulations related to intellectual property rights, privacy, data quality and liability, national security, impact spatial data sharing agreements.



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These legal and policy issues arise whenever any organization enters into a license agreement, but they become much more complex in any spatial data sharing arrangement. Similarly with respect to privacy matters, societies across the globe are struggling with what defines a "reasonable expectation of privacy" from a location standpoint. Almost daily, consumers (and constituents) read or hear media reports on how their location privacy is challenged by technologies such as Google Street View, commercial satellite imagery, Facebook Places, location-based services, CCTV cameras and RFID technology. In such a sensitive environment, legal counsel may believe it is too great a risk to share or use potentially sensitive datasets, particularly when the privacy law is outdated, confusing or nonexistent.

Determining and retaining intellectual property rights in spatial datasets can also be a complex issue. Integrating proprietary datasets and crowdsourced or community data and other spatial data infrastructures is subject to its own set of restrictions and requirements. There is a large open data community that argues that government data should be made available to the public without restrictions. However, even this becomes complicated due to the various licensing regimes that can be associated with "free and open" data. This uncertainty in determining the limitations and ownership rights in products that combine data from different sources is a challenge for legal counsel. Often the simplest and easiest solution is to limit such sharing. For instance, local government agencies in the UK are reportedly barred from putting data on Google Earth due to concerns over the ownership rights Google will subsequently retain in such data. Read [more on the article](#). See [INSPIRE Data Policy and Legal Working Group Issues Paper](#) (2002) p.26 (pdf) and [UK Row over Publishing Public Mapping Data](#).

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.

[ESRI South Africa presents a full spectrum of GIS courses](#)



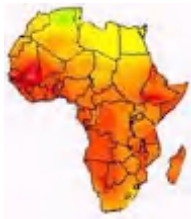
The course covers GIS theory and functionality: The desktop products (ArcView, ArcEditor, and ArcInfo; Server products (ArcGIS server and ArcSDE); Programming to enable customization of the product, ArcGIS extensions, as well as Introductory and advanced courses in ERDAS Imagine Remote Sensing Software'

December 2010 Courses

- Geoprocessing and Analysis Extensions
- ArcGIS Server and Mobile GIS
- Introduction to ArcGIS Server
- ArcGIS Desktop III: GIS Workflows and Analysis
- ArcGIS Desktop 1: Getting Started with GIS
- ArcGIS Desktop 1: Getting Started with GIS
- Working with Spatial Analyst
- Bringing Data into ArcGIS
- Creating and Publishing Maps with ArcGIS
- Working with ArcGIS 3D Analyst
- ArcPad for ArcGIS
- Understanding Projections in GIS

January and February 2011 Courses

- ArcGIS Desktop 1: Getting Started with GIS - Midrand 17-19 January
- ArcGIS Desktop II: Tools and Functionality - Midrand 17-20 January 2011
- Building Geodatabases - Midrand 19-21 January 2011
- Bringing Data into ArcGIS - Midrand 24-24 January 2011
- Introduction to Multi-User GeoDatabases - Midrand 24-25 January 2011



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- ArcGIS Server Web Admin - Midrand 26-28 January 2011
- ArcGIS Desktop III: GIS Workflows and Analysis - Midrand 26-28 January 2011
- ArcGIS Desktop III: GIS Workflows and Analysis - Port Elizabeth 26-28 January 2011
- GIS For Managers - Midrand 31 Jan - 1 Feb 2011
- ArcGIS Desktop 1: Getting Started with GIS - Midrand 31 Jan – 2 Feb 2011

ESRI Northeast Africa: Seasonal Training Winter 2011

ESRI NeA will be holding a seasonal training on 23 - 27 January 2011 in Sharm Al Sheikh. The week long training event will host three different tracks, catering to different types of users. All instructors are ESRI certified instructors.

The GIS Basics Track will include two courses:

- ArcGIS Desktop I: Getting Started with GIS;
- ArcGIS Desktop II: Tools and Functionality.

The GIS for Managers Track B includes:

- GIS Managers Course: The goal of this course is to provide GIS managers with information about the different GIS products and their uses.
- GIS for Project Management Course: The goal of this course is to provide GIS managers with ideas and techniques for the development and management of successful GIS programs in their organizations. The course also covers Microsoft Project concepts, and utilizes the case study method for managing GIS projects using Microsoft project.

The Awareness Days & Workshops Track offers specialized workshops on:

- GIS in Managing Urban and Regional Planning;
- Remote Sensing - essential aspects and concepts of remote sensing.

For more information and reserve your place, contact: seasonaltraining@esrinea.com. Phone: +2015 1176 6670.

Scholarship - CPAE Urban Observatory, South Africa

Scholarships are available for 1 x MSc project, for full-time study. Applicants should have interests and experience in the following areas:

- Computer Programming
- Mathematical Modelling
- Remote Sensing
- Geographic Information Systems

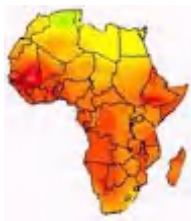
Applicants for MSc studies should have completed a minimum of a 4 year BSc or 3 year BSc and Hons degrees in either:

- Geomatics
- Computer Science
- Environmental and Geographical Science or similar.

Applicants should submit the following documentation: Letter of motivation, Curriculum Vitae (with contactable academic references), full academic transcript, and Short research proposal (500-1000 words). Applications should be submitted to Assoc. Prof. Dr. Julian Smit (Julian.Smit@uct.ac.za) by 15 December 2010. The scholarship will be confirmed by end December and the candidate to commence with the research as soon as possible in 2011.

The NFP deadline for application for several Certificate courses – intake 2011- is almost due

- [Scenario Development, Spatial Planning Support Systems and Collaborative Decision Support](#)
- [Remote Sensing and Digital Image Processing](#)
- [GIS Operation](#)
- [Cartography and Geo-Visualization](#)
- [Risk Management and Environmental Assessment for Spatial Planning](#)
- [Assessment of the Effect of Climate Change on Agro-ecological Systems Using Optical and SAR Remote Sensing and GIS](#)
- [Distributed Data Access Technologies for Natural Resources Monitoring](#)
- [Geo-information and Governance: concepts, approaches, research methodologies and research practice](#)
- [Participatory GIS - Principles and Applications](#)
- [Remote Sensing Methods for Deriving Geo-biochemical Properties of Aquatic Ecosystems](#)



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- [Retrieval of Land Surface Hydrological Parameters](#)
- [Strategic Environmental Assessment \(SEA\) and Environmental Impact Assessment \(EIA\) Applying Systems Analysis and Spatial Decision Support tools](#)
- [Spatial Modelling of Biological Ecosystem Properties](#)
- [Spatial Change and Spatial Interaction Modelling](#)
- [Climate Change Impacts and Adaptation: Analysis and Monitoring Techniques for Climate Change](#)
- [Large-Scale Process Modelling and Data Assimilation](#)

For the complete list of all ITC courses, please check the [ITC Course Finder](#)

[Institute for Capacity Development \(ICD\)](#) - Short Courses Registration, Victoria Falls & Windhoek (November - December 2010)

The Institute for Capacity Development (ICD) is conducting capacity training short courses in the months of October - December, 2010. Registration is on and institutions are invited to nominate participants from among their officers to attend these capacity enhancing courses. The Training Venues are Windhoek (Namibia), Pretoria (South Africa) and Victoria Falls (Zimbabwe).

The major objective of the courses is to develop and enhance staff effectiveness, sound management and Leadership skills for staff in the specific areas of training. The courses can also be conducted specifically for organizations and customised to specification requirements. Further information and [Registration Online](#), see website: www.icdtraining.com or [2010 Training Calendar](#). Contact: Clemence Chiduwa, Training coordinator at coordinator@icdtraining.com.

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

The course is designed for mid-career professionals who are engaged at higher levels and deal with policy making either from the research side (as advisor), government side, or from civil society who aim to have a full understanding of climate change adaptation concepts, be able to effectively and meaningfully contribute to the debate on climate change adaptation, either in the policy process and/or in providing knowledge to the policy process. For details, contact: Terwisscha van Scheltinga (Catharien), Wageningen University at Catharien.Terwisscha@wur.nl or www.ess.wur.nl/UK/People/Catharien+Terwisscha+van+Scheltinga/, <http://portals.wi.wur.nl/climatechange>, www.genderandwater.org.

[Free ESRI Courses](#)

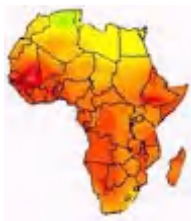
Free online course modules from ESRI's Virtual Campus site. Learn the basics of many of their software packages and extensions or take some concept courses such as a review of projections.

[ESRI Eastern Africa Hands-on Training for GIS Professionals](#)



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

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



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- Introduction to Programming ArcObjects using .NET 4
- Introduction to Geo-processing using Python 3

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

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

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

[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 Education Brochure 2011-2012 online](#)

Read the new ITC Education brochure with all the degree, diploma and certificate programmes in geo-information science and earth observation starting in 2011. More information will be available soon at www.itc.nl/Pub/Study/CourseFinder

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

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

Funding Opportunities, Awards, Support

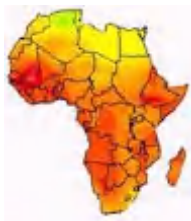
[START \(SysTem for Analysis, Research and Training\) - Environmental Change Research in Africa 2011](#)



START calls for proposals from African scientists to conduct collaborative research and assessments of global environmental change in Africa. The guiding theme is *climate change, agriculture, and food security* - with emphasis on the sustainability of ecosystem services. At least three African scientists per collaborative group apply for grants of approximately US\$45 thousand per group. The deadline for applications: 6 December 2010.

[Danish Ministry of Foreign Affairs with Danida Fellowship Center- Development Research 2011](#)

The themes include *climate, energy, and sustainable natural resources*. They also include economic growth related to property rights, *agricultural productivity*, and other factors. Priority is for research projects submitted by Danish institutions in partnership with organizations in the South, particularly in Denmark's



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partner countries (in Africa and in 2011: Burkina Faso, Ethiopia, Kenya, Somalia, Sudan, Tanzania, Uganda, Zambia, and Zimbabwe). Pre-applications for larger strategic projects are due 8 December 2010; applications from PhDs and post-docs are due 11 February 2011.

[EC Research FP7 - Food, Agriculture and Fisheries, and Biotechnology 2011](#)

Research call FP7-KBBE-2011-5 includes many opportunities for researchers in developing countries. PAEPARD identified following relevant themes for Africa: KBBE.2011.2.5-02 Reducing post-harvest losses for increased food security ; KBBE.2011.1.3-01 New/next generation of researchers for Neglected Zoonoses at the animal-human interface ; KBBE.2011.1.4-08 Role of aquaculture in improving food security and eradicating poverty worldwide ; KBBE.2011.1.3-02 Development of field tests for rapid screening of pathologies as well as simple laboratories tests in animals ; KBBE.2011.1.3-04 - Management and control of increased livestock helminthes parasite infection risks due to global changes ; KBBE.2011.3.1-02 - Perennial grasses: optimizing biomass production ; KBBE.2011.3.4-01 - Bio-WASTE - Novel biotechnological approaches for transforming industrial and/or municipal bio-waste into bio-products. Closing date: 25 January 2011.

[African Enterprise Challenge Fund \(AECF\) - Energy and Agriculture in East Africa](#)

REACT Round-1 offers grants and repayable grants of up to US\$1.5 million to for-profit companies for business ideas in low-cost and clean energy and technologies for adapting to climate change in the East African Community - Burundi, Kenya, Rwanda, Tanzania, and Uganda. (ii) TZAW Round-1 offer grants and repayable grants of up to US\$1 million to for-profit companies for ideas in agribusiness and value chains which extend from rural Tanzania to local and international markets. The closing date for applications: 31 January 2011.

[Orskov Foundation - Small Grants for Agriculture](#)

Orskov makes grants of up to £2,500 to support agriculture in developing countries. One category of grants supports university students in agricultural studies related to poverty alleviation and environmental sustainability. The second category of grants is for community-based agriculture on a revolving-fund basis. Application deadline: 31 January 2011.

[Austrian Development Cooperation - Higher Education and Research for Development](#)

The Austrian Partnership Program in Higher Education and Research for Development ("Appear") 2nd call for proposals. The program funds masters and PhD studies at Austrian universities, and it builds the capacity of academic partner institutions in developing countries. Program themes include water supply and sanitation, energy, and environment and natural resources (among others). Eligible countries are Bhutan, Cape Verde, Burkina Faso, El Salvador, Ethiopia, Guatemala, Kenya, Mozambique, Nepal, Nicaragua, Palestinian Territories, Senegal, and Uganda. The deadline for submissions: 31 January 2011.

[World Wide Fund for Nature \(WWF\) - Prince Bernhard Study Grants 2011](#)

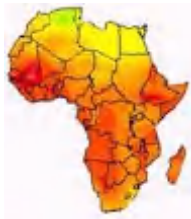
WWF announces the 2011 Prince Bernhard Scholarships to fund mid-career training of individuals working in conservation or disciplines directly relevant to conservation. Eligibility extends to nationals from Africa (including Madagascar); Asia and Pacific; Latin America and Caribbean; Eastern Europe; and the Middle East. WWF gives preference to applicants seeking support for studies in their own country or region. Maximum grant amount is CHF 10 thousand. Applications (English, French, and Spanish) are due: 11 January 2011.

[UNEP - Young Environmental Journalist Award Africa](#)

UNEP invites African journalists between 25 and 35 years old, working for African news and media organizations, to compete for this new award. The winner will be a journalist (print, radio, television, or online) who has provided new insights, challenged established thinking, and enhanced public understanding of the environment in Africa in 2010. The winner will receive a trip to the USA to interact with environmental projects, environmental journalists, scientists, and public figures. The closing date: 31 December 2010.

Employment Opportunities

BirdLife International Project Manager, Monrovia, Liberia



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BirdLife International is seeking an experienced Project Manager to lead the implementation of a groundbreaking trans-boundary project entitled 'Across the River – A transboundary Peace Park for Sierra Leone and Liberia'. The position will entail management of field and advocacy work in Sierra Leone and Liberia in collaboration with the national BirdLife Partners (the Conservation Society of Sierra Leone & the Society for the Conservation of Nature in Liberia), the Gola Forest Programme and the Government Forestry authorities in both countries to achieve project objectives. The BirdLife Project Manager will be based in Monrovia, Liberia while his assistant (the Deputy Project Manager) will be based in Kenema, Sierra Leone.

- The successful candidate will have significant field based experience of Protected Area or Natural Resource project management or demonstrable similar experience.
- Excellent project and financial management skills are essential
- Minimum academic qualification is a Masters degree in a relevant area of natural resource management, biodiversity conservation or related areas.
- S/he should have a good track record and experience in conservation work in Africa.
- Exemplary communication and writing skills in English will also be essential as will evidence of ability to work well under pressure and with little or no direct supervision.
- Experience and knowledge of working with NGOs in Africa (or elsewhere) will be advantageous

Duration of contract: Twenty four months. The indicative starting date for this position is 01 April 2011. Submit application by email to Alex.Hipkiss@rspb.org.uk or paulinus@africaonline.com.gh. Applications deadline: 31 December 2010.

Director, Policy and Science, Switzerland

The Director, Policy and Science reports directly to the Executive Director, Conservation and provides the WWF Network, the Global Initiatives and other priority programs with research, analysis, and strategies that allow WWF to influence the rules, procedures and actions of governments, the private sector, and international institutions. The incumbent should possess:

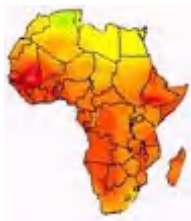
- Advanced degree or equivalent work experience in relevant discipline like environmental policy, environmental law, environment and development or natural resources management;
- At least 10 years of relevant professional policy experience in conservation, environment and development work, and at least 5 years of relevant professional management experience of multidisciplinary teams;
- In depth understanding of global and regional environmental, natural resources and geopolitical governance;
- Project management and remote management skills;
- Demonstrable management, leadership and supervisory skills; ability to mentor and develop multidisciplinary, multicultural teams;
- Experience working with governments, corporate sector, aid agencies, civil society, and NGOs; donor relation management, fundraising;
- Strong oral and written communication skills in English, other languages are an advantage.

Candidates should email a cover letter and their CV to recruitments@wwfint.org. Nationals of developing countries are strongly encouraged to apply. Application deadline: 2 January 2011.

Senior Experts / ACP Countries, Malawi

CYE Consult is a consultancy company with ample experience in development aid in more than 30 countries throughout the world, in the frame of projects and programmes financed by the most important bilateral and multilateral institutions of cooperation. CYE Consult is looking for long term and short term Senior Experts for a forecast project in ACP Countries. The incumbent should possess:

- A relevant University in Economics, Business Administration, Development Studies or other fields with equivalent experience.
- 10 years professional experience in project management in ACP countries
- Previous experience working on NAO (National Authorising Offices) projects
- Experience of capacity building and institutional strengthening within NAO, Government Ministries and other public bodies
- Experience with EDF procedures on EU-funded programmes/projects
- Experienced with PCM/LFA and EC procedures
- Excellent management and interpersonal skills
- Administrative and financial skills



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- Excellent command of English and/or French

Send CV in EC format together with contact details (e-mail and/or phone number) to: vgalletti@cyiconsult.com. Application deadline: 31 Jan 2011.

Other

[Associated Programme on Flood Management \(APFM\): HelpDesk Support Base Partners meeting](#), 4 - 5 October 2010 Geneva, Switzerland

After the official launch of the IFM HelpDesk in June 2009 further efforts would need to be undertaken to make the availability of the IFM HelpDesk known to the foreseen beneficiaries. Close collaboration with all support base partners in the fine tuning of the functionality of the IFM HelpDesk would keep being pursued. The process of interacting with the support base partners and quality control of outputs will need further tuning, and this meeting should offer a good occasion to move in this direction. Further efforts will be undertaken to strengthen the direct linkages to the financial partners for follow up of projects and strategies developed under the IFM HelpDesk. Presentations from Support Base Partners (SBPs) included:

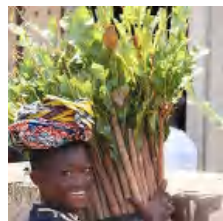
- [Asian Disaster Preparedness Center \(ADPC\)](#)
- [Bureau of Meteorology, Australia \(BOM\)](#)
- [Danish Hydraulic Institute \(DHI\)](#)
- [EUROAQUA](#)
- [International Association of Hydrological Science \(IAHS\)](#)
- [Japanese Support Base Partners \(MLIT, ICHARM, JICE & JWA\)](#)
- [International Centre for Water Hazard \(ICHARM\)](#)
- [United Nations Economic Commission for Europe \(UNECE\), Water Convention](#)
- [UNESCO-IHE](#)
- [Nile Basin Capacity Building Network \(NBCBN\)](#)

[Free ArcGIS Game](#)



From the press release: "Fifteen Puzzles is a way to relax for a coffee break right inside ArcGIS. Your map is cut into fifteen tiles that are randomly shuffled - and you can start finding the quickest and most efficient way to put it back together."

[North African crops to be hit hardest by climate change](#)

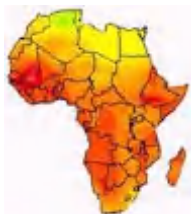


North African agriculture will be the worst affected by climate change, according to an assessment of how 50 key crops will perform around the world under increasing temperatures over the next 40 years. Climate change will raise average crop productivity until 2020, after which it will decline by 5-10 per cent by 2050, according to research carried out by the International Center for Tropical Agriculture (CIAT) in Colombia. The results were presented on 17 November at a press conference to announce the launch of a Consultative Group on International Agricultural Research (CGIAR) mega-programme to address the effects of climate change on food security.

CIAT researchers calculated the 'climatic potential to produce food' for 50 of the world's most important crops. This is the hypothetical best-case scenario in which crops can be shifted to more suitable zones to avoid the worst, or exploit the best, climate impacts.

They concluded that most of the short-term gains until 2020 will be seen in the Northern Hemisphere. Andy Jarvis, a research fellow at CIAT, said that rice yields on the Indo-Gangetic plains will increase by around two per cent, even up to 2050. But wheat will experience productivity losses of up to 10 per cent. "There is no single region where all crops are losing productivity," said Jarvis, "but people are depending on very specific crops for their food security, and in many cases the crop they're growing today is going to lose out in the future."

- Important crops such as wheat, potato, sorghum and soya will lose out in West Africa, while more robust crops such as white yam, sugar cane and plantain will benefit from the higher temperatures.
- Similar patterns will be seen in East Africa with beans - known as the protein of the poor - predicted to experience yield losses of 3-5 per cent.
- North Africa will experience the worst effects, with 80 per cent of its crops losing productivity to 2050 and beyond.



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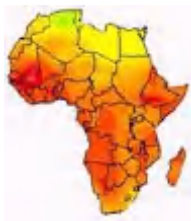


The Climate Change, Agriculture and Food Security programme, which will be formally announced on December 4 at the climate change conference (COP 16) in Cancun, Mexico, will pool knowledge on the impacts of climate change on food security to try and find a way forward. The programme aims to reduce poverty in targeted regions by 10 per cent, and reduce the number of rural malnourished poor by a quarter, by 2020. It also hopes to put agriculture on the post-2012 international climate-change agenda.

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

Conferences, Events

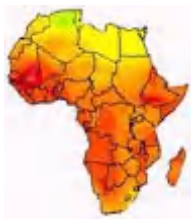
Date	Location	Event
December 2010		
4-5 December 2010	Cancun, Mexico	World Climate Summit
5-7 December 2010	Riyadh, Saudi Arabia	4th International Conference on Water Resources and Arid Environments (ICWRAE 2010) - Water Resources; Water Conservation; Arid Environments; Utilization of New Technologies in the Study of Arid Environments and their Natural Resources.
5-9 December 2010	Bielefeld, Germany	Environmental Degradation and Conflict: From Vulnerabilities to Capabilities , Deadline for application: <u>15 August 2010</u> .
13-16 December 2010	Abu Dhabi	Eye on Earth Summit
14-16 December 2010	Benghazi, Libya	International Arab Conference on Information Technology (ACIT 2000) , Deadline for paper submission: <u>30 June 2010</u> .
31-3 January 2011 * NEW *	Monterey, United States	"Agriculture: Promoting Livelihoods in Conflict-Affected Environments"
January 2011		
1 January - 31 December 2011 * NEW *	Worldwide	International Year of Forests 2011
8-14 January 2011	Johannesburg, South Africa	23rd Colloquium of African Geology
10-14 January 2011	Hyderabad, India	International Forestry Resources and Institutions panels for the 13th Biennial Conference of the International Association for the Study of the Commons (IASC)
18-21 January 2011	Hyderabad, India	Map World Forum 2011
28-29 January 2011 * NEW *	Beppu, Oita, Japan	2011 International Winter Conference on Environmental Innovations and Sustainability
February 2011		
14-16 February 2011 * NEW *	Cairo, Egypt	International Conference on Energy Systems and Technologies
21-25 February 2011	Nairobi, Kenya	26th Session of the UNEP Governing Council/Global Ministerial Environment Forum
26- 28 February 2011	Singapore, Singapore	2010 3rd IEEE International Conference on Signal Acquisition and Processing (ICSAP 2011)
March 2011		
20-22 March 2011 * NEW *	Hammamet, Tunisia	ST Environment: International Congress on Environmental Science and Technologies for a Sustainable Development
20- 25 March 2011	Cape Town, South Africa	2011 African Conference on Software Engineering and Applied Computing



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23-25 March 2011 * NEW *	Enschede, Netherlands	Spatial Statistics 2011 - Mapping Global Change
April 2011		
6- 8 April 2011	Stellenbosch, South Africa	4th IUPAP International Conference on Women in Physics
10-15 April 2011	Sydney, Australia	34th International Symposium on Remote Sensing of Environment (ISRSE2011) Contact: Ian Dowman, idowman@cege.ucl.ac.uk .
18- 21 April 2011	Exeter, UK	8th International Symposium on Weather Radar and Hydrology (WRaH 2011) - User applications of weather radar for flood forecasting and water management
May 2011		
9-13 May 2011	Sun City, South Africa	5th International Wildland Fire Conference (WildFire 2011) Contact: info@wildfire2011.org .
11-13 May 2011 * NEW *	Orlando, USA	2nd International Conference on Disaster Management and Human Health: Reducing Risk, Improving Outcomes
18-22 May 2011	Marrakech, Morocco	FIG Working Week & XXXIV General Assembly Contact: FIG Office, fig@fig.net .
18-20 May 2011 * NEW *	Morelia, Mexico	3rd. International and 12th. National Socioeconomic and Environmental Research Conference on Livestock Farming
20 - 22 May 2011	Agadir	Climate Change, Agri-Food, Fisheries, and Ecosystems: Reinventing Research, Innovation, and Policy Agendas for an Environmentally and Socially-Balanced Growth , Deadline for abstract/proposal submission: October 15, 2010. Contact: Dr. Mohamed Behnassi at behnassi@gmail.com .
22- 26 May 2011	California, United States	World Environmental and Water Resources Congress , Deadline for abstracts/proposals: 7 September 2010.
31 May- 2 June 2011	Capetown, South Africa	AfricaGEO2011
June 2011		
July 2011		
3-8 July 2011	Paris, France	25th International Cartography Conference (ICC 2011)
29 July-4 August 2011 * NEW *	Banos, Ecuador	2011 International Biodiversity Conference
August 2011		
July 29 - August 4, 2011	Banos, Ecuador	2011 International Biodiversity Conference , Contact: Dr. Barker at barkerb@wildspotsfoundation.org .
21-25 August 2011 * NEW *	Merida, Yucatan, Mexico	SER2011 World Conference on Ecological Restoration
22-26 August 2011	Wellington, New Zealand	5th International Symposium on GIS/Spatial Analyses in Fishery and Aquatic Sciences
September 2011		
4 - 8 September 2011	Cape Town, South Africa	The 6th Science Centre World Congress
12-16 September 2011 * NEW *	Ticino, Switzerland	3rd Symposium on Environmental Weeds & Invasive Plants (Intractable Weeds and Plant Invaders)
October 2011		
5-6 October 2011 * NEW *	Port Harcourt, Nigeria	Seventh International Conference on Sustainable Development



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10-14 October 2011 * NEW *	Kimberley, South Africa	International Wildlife Ranching Symposium
10-21 October 2011	Changwon, Korea	UNCCD COP 10 , Contact: UNCCD Secretariat at secretariat@unccd.int
October 2011	Cairo, Egypt	AfricaGIS2011 Conference
19-21 October 2011 * NEW *	Bloemfontein, South Africa	1st International Conference on Clays and Clay Minerals in Africa and 2nd International Conference on Geophagia in southern Africa
November 2011		
28 November - 9 December 2011	South Africa	17th Conference of the Parties to the UNFCCC and 7th Meeting of the Parties to the Kyoto Protocol Contact: UNFCCC Secretariat, secretariat@unfccc.int .
December 2011		
13-15 December 2011 * NEW *	Shah Alam, Malaysia	Third International Conference on Management of Natural Resources, Sustainable Development and Ecological Hazards
2012		
21-27 May 2012 * NEW *	Vilnius, Lithuania	12th World Congress on Environmental Health: New Technologies, Healthy Human Being and Environment
2-6 July 2012 * NEW *	Galle, Sri Lanka	MMM3 : Meeting on mangrove ecology, functioning and management
8-12 July 2012	San Diego, California USA	ESRI User Conference
8-12 July 2013	San Diego, USA	ESRI International User Conference

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Gordon Ojwang', Editor, SDI-Africa AT gsdi.org or sdi africa@rcmrd.org or gojwang@rcmrd.org

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