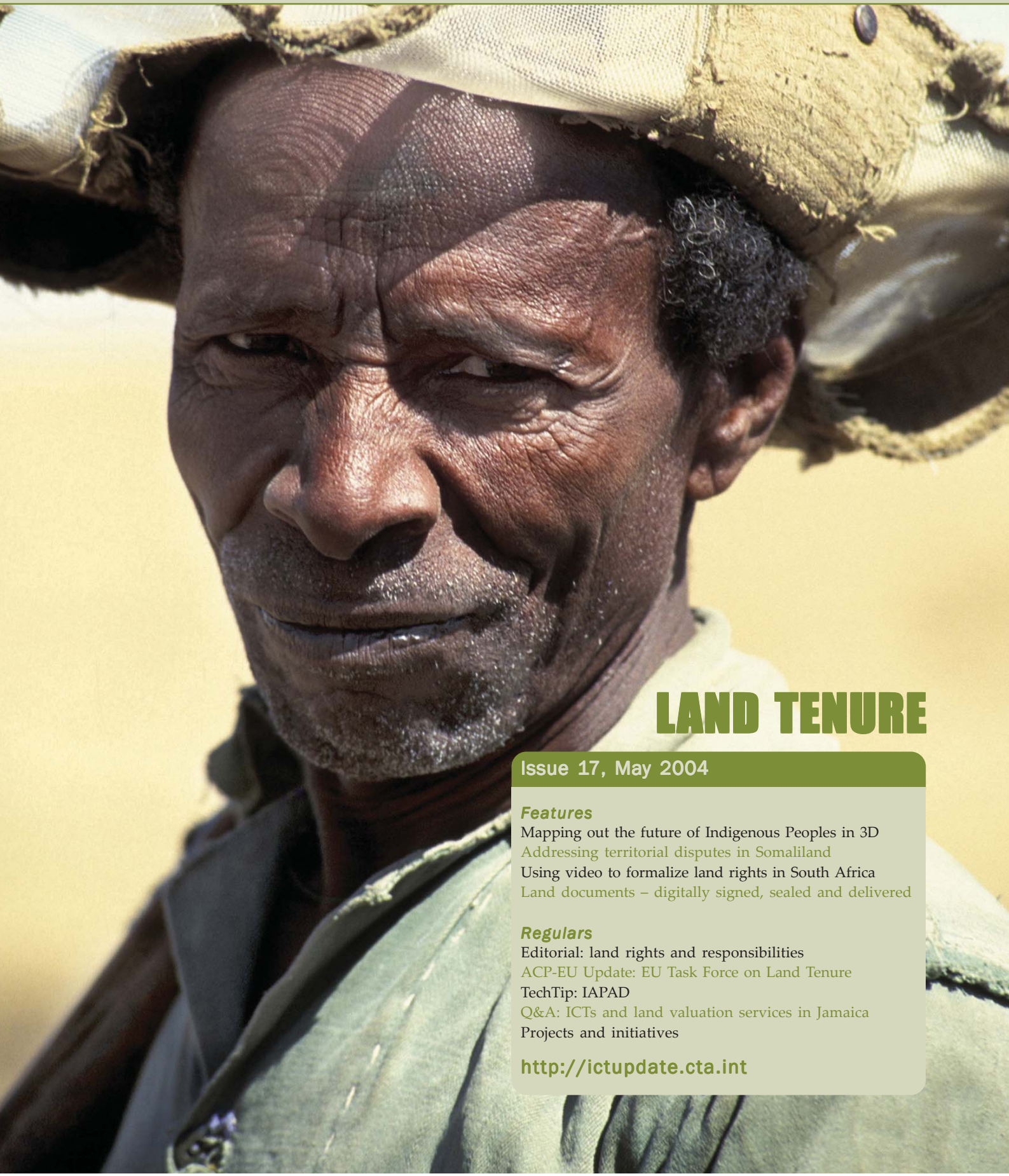
ICT Update
A current awareness bulletin for ACP agriculture
CTA



LAND TENURE

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http://ictupdate.cta.int

Land rights and responsibilities

In a world with limited arable land and growing populations, ICTs are increasingly becoming part and parcel of land policy. It's easy to see why – ICTs offer affordable, efficient means of mapping land boundaries and making land information available to the public. They have become instrumental in establishing land rights, resolving land conflicts, improving natural resource planning and, last but not least, in streamlining land valuation procedures. ICTs are also enhancing the ability to assess whether land policies are successful – they allow policymakers to identify areas where land reform measures have led to increased agricultural production.

In 2002 the European Commission set up the EU Land Policy Task Force to establish a common framework for the design of land policy reform processes in developing countries. As Philip Mikos explains, the EU Land Policy Guidelines, to be issued later this year, will focus on how the EU may assist ACP nations in developing a 'multi-sector' approach to land tenure rights, economic development, poverty reduction and good governance.

Such a framework must first take into account the need to establish clear proof of land ownership by means of land surveys and land rights identification procedures. This issue of *ICT Update* describes several projects where ICTs are offering added value. First, Rino Bersalona and Kail Zingapan explain how global positioning system (GPS) and 3D modelling techniques are supporting the efforts of the indigenous peoples of Mindanao, the Philippines, to map their ancestral domains and thus secure their land tenure rights. John Drysdale describes how the Natural Area Coding System is enabling farmers in Somaliland to gain legal title to their land, and to rebuild communities devastated by decades of civil war. From South Africa, Mike Barry reports on pilot projects that use video film clips integrated into a geographic information system (GIS) database for the purpose of defining, adjudicating and recording land rights in rural and informal peri-urban communities.

ICTs are also helping improve land administration procedures. Online information systems offer improved access to information for both the authorities and the public, and secure database systems help prevent fraud. Suraj Kulkarni describes SARITA, a software platform that has transformed the process of registering land title documents in the Indian state of Maharashtra. Government officials now scan documents and store the images on CD, together with digital photographs and thumbprints, as a precaution against forgery. Finally, Adrienne Mullings explains the work of Jamaica's National Land Agency (NLA) and eLandjamaica, an online information system that provides access to the agency's land valuation services and has led to greater accountability and transparency in land tax assessment procedures.

The application of ICTs in land surveys and registration systems alone, however, will not ensure the effective distribution and development of land. Governments must also step up their efforts to keep existing data up to date – the consequences of incomplete land registration information are often worse than having none at all. Further, ACP States and their EU counterparts must strive to create more linkages between their land tenure policies and economic investments in areas such as infrastructure projects and microfinance services. These will be the most crucial challenges in the years ahead.

EU Task Force on Land Tenure

Most international institutions and donor agencies now recognize that land issues, in particular well organized land tenure systems, are crucially important for economic development and growth, poverty reduction and governance in the developing world. The European Commission and the EU Member States share the belief that broad and equitable access to land is instrumental in promoting peace, reducing rural poverty and discouraging mass migration to urban areas. They recognize that in many ACP states changes will be necessary to create a policy environment that fosters open agricultural markets, helps to redistribute land from large landowners to the poor, and acknowledges indigenous or customary tenure rights. Land tenure is a politically sensitive issue, but it must be addressed in EU-supported development cooperation strategies if they are to be effective.

In this context, the EU Task Force on Land Tenure was created in January 2002 at a meeting of rural development officials of the European Commission and EU Member States, with two objectives:

- to contribute to the World Bank's three-year research and consultation process that involved extensive discussions with policy makers, advocates for the poor and land experts around the world, resulting in the policy research report *Land Policies for Growth and Poverty Reduction*; and
- to formulate 'EU Land Policy Guidelines' to support, through the European Commission and Member States' bilateral programmes, the design of land policy reform processes in developing countries.

The draft guidelines were finalized in December 2003 and focus on how the EU may assist ACP nations in:

- developing a 'multi-sector' approach to land tenure rights, economic development, poverty reduction and good governance;
- creating a policy framework for land tenure reform that involves the state, civil society and R&D networks; and
- determining the implications of this framework for donors and development agencies.

The first part of the draft guidelines identifies the links between land and other major policy areas, such as agricultural development and taxation. The second part is more operational in nature, identifying opportunities for changes in land policy, outlining principles for successful land policy design and describing possible donor interventions.

In early 2004, the draft guidelines were submitted to a civil society consultation, facilitated by the International Land Coalition. A report on the results of this consultation was submitted to the Commission on 18 March, and will be reflected in a Communication to be issued later this year. The Communication is intended to initiate a political discussion in the European Council and Parliament on a common approach by the Commission and the EU Member States to assess national land policies and, ultimately, to support an effective, coherent EU response strategy to land reform in Developing Countries.

Philip Mikos (email: *philip.mikos@cec.eu.int*) is the coordinator of the EU Task Force on Land Tenure. To read the draft guidelines, and the report on the consultation, visit *www.landcoalition.org*.

TechTip: IAPAD

The Integrated Approaches to Participatory Development (IAPAD) programme has developed Participatory 3D Modelling (P3DM), a community-based tool that merges GIS-generated data, local knowledge and traditional spatial information (cognitive maps) to produce a 3D relief model. The model provides a user-friendly and relatively accurate tool for spatial research, planning and management, and serves as focal point for sharing information. The IADAP website offers access to various P3DM applications and project case studies, as well as the P3DM manual, a participatory mapping toolbox and modelling tips. *www.iapad.org/*

P3DM: mapping out the future of Indigenous Peoples in 3D

Rino B. Bersalona and Kail M. Zingapan explain how indigenous communities in the Philippines are using GPS and participatory 3D models to reclaim their ancestral territories.

A group of Talaandig tribesmen is gathered in a clearing on the island of Mindanao in the Philippines. Some members of the group are perched on a boulder, huddled over a small, yellow device and are visibly worried about the bad weather. Finally, they sigh with relief when their chief declares, 'Alright, we have a GPS signal!'

The Talaandig people are part of what can be described as a new movement of indigenous community surveyors. Equipped with global positioning system (GPS) receivers, these surveyors have an ambitious goal – to delineate and reclaim their ancestral territories. Their GPS records are used to create accurate three-dimensional maps through an innovative process known as participatory 3D modelling (P3DM). Coordinated by the Philippine Association for Intercultural Development (PAFID) and sponsored by the European Union, P3DM initiatives are facilitating cooperation and effective decision making among indigenous communities and government planners in two important fields: land conflict resolution and natural resource planning.

In just over five years, PAFID and its community partners have mapped over a million hectares of ancestral domains. Due to their technical accuracy and exhaustive detail, P3DM maps are now accepted by the government as proof of claims for legal recognition of ancestral land rights. Until recently, the bulk of indigenous lands had not been properly surveyed and had been classified as state owned. Planning officials had designated large areas for mining, logging and military installations, which led to evictions, violent confrontations and the mass dispossession of many local communities.

For example, the Teduray tribe in the province of Sultan Kudarat had been evicted, and their members harassed by private and public land developers. By mapping their ancestral domains, they have been able to prove their occupation of the land since time immemorial. Now that the tribe has legal title to the land, the provocations and the violence have ceased.

The P3DM models are also proving invaluable in natural resource planning. With increasing pressure on diminishing resources such as freshwater, forests and fish, making sustainable development plans is crucial to the survival of small tribes. Because the physical three-dimensional features of a P3DM model are immediately recognizable, all members – including elders and those who cannot read – are able to participate in resource planning. Such models have been used in resolving inter-tribal conflicts over resources, most notably water, and in pointing out problem areas and solutions to government planners.

In the P3DM process, indigenous communities create 3D models (left) which are digitally recorded and turned into GIS maps (right). Photos: G.Rambaldi/NIPAP

The mapping process

The P3DM mapping process starts with a series of consultations during which key group members, such as elders and leaders, provide information about their territory and discuss their needs and obligations with regard to the land. The members then produce rough sketch maps of their domain, and identify its boundaries and important geographical features such as mountains and water bodies. The dimensions and coordinates of these features are verified by GPS ground surveys, and the sketch maps are refined.

Next, the group creates a 'blank' relief model, which starts out as a series of layers of cardboard. Single contour lines from topographic maps are traced onto the cardboard, and the pieces are cut out and pasted one on top of the other to build up a 3D model of the area. The members of the group bring the relief model to life using paint, yarn and push pins of various colours and sizes to indicate the details identified on the sketch maps, as well as natural resources, land cover, settlements and infrastructure. Other features, including administrative boundaries or protected areas, can be added to the model at a later stage. The meanings of the various map elements remain clear and consistent because all community members refer to a single, mutually agreed upon legend.

The next step in the process involves taking high-resolution digital photographs of the 3D model that can be integrated into a geographical information system (GIS) so that the data are more widely accessible. Once the images have been stored in a computer, they may be corrected with additional GPS ground survey data and combined to produce 2D thematic maps (of land cover, natural resources, etc). These maps are validated by the communities before they are submitted to the National Commission on Indigenous Peoples (NCIP) for review. The 3D models and the 2D GIS maps are regularly updated to reflect any changes in land use.

PAFID's experiences demonstrate that an intelligent combination of participatory decisionmaking and modern technology can provide solutions to land conflicts and assist in natural resource planning. The secret of the success of the P3DM approach lies in its ability to engage both indigenous community members and the authorities in an ongoing political dialogue that is mutually beneficial.

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FEATURE

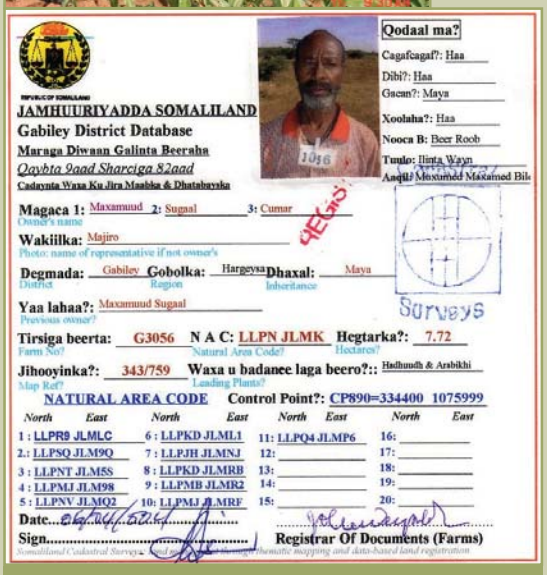
Cadastral Surveys: addressing territorial disputes in Somaliland

John Drysdale describes how natural area codes and a geographic information system (GIS) database are enabling farmers in Somaliland to gain legal title to their land.

Abdi Hassan, a farmer in the Gabiley district of Somaliland, proudly holds out a laminated ID card to a visiting extension worker. The card is a land ownership certificate issued by the Ministry of Agriculture, and includes a headshot of Hassan, his name and a 10-digit code. 'This code represents the exact location of my farm', Hassan explains. 'Every farmer in the area now has one. For generations, our farm land had not been formally surveyed, so there were no officially recognized boundaries. The authorities would not issue any land title deeds. The situation has been worse since the end of the civil war. When the farmers returned there were many disputes over land, which sometimes became violent. No more – our land boundaries are now indisputable'.

This transformation has been achieved through a major UNDP-supported initiative, implemented by a local NGO, Cadastral Surveys, in collaboration with a Canadian company, NAC Geographic Products Inc. (NACGEO). Together they have helped to bring peace to this troubled region by surveying, delineating and registering land boundaries on the basis of the Natural Area Coding System.

Natural area codes (NACs) are basically a simpler, more compact form of geographical coordinates than those used by other mapping methods such as the global positioning system (GPS). NACGEO has developed a computer algorithm that shortens the long strings of longitude-latitude coordinates and replaces them with NACs, or digital addresses, that are as easy to remember as telephone numbers. A NAC consists of a string of up to ten alphanumeric characters – the longer the string, the smaller the area, and thus the greater the detail. Thus, a two-character NAC specifies an area of about 1000 square kilometres, six characters 1 square kilometre, and ten characters one square metre. In Somaliland, it was decided to use ten-character NACs, providing unique identifiers for every farm plot, building or even tree.



Somaliland's NAC mapping process begins with land surveys (top) and culminates in land ownership certificates (below). Photos: Cadastral Surveys

The NAC system

NACGEO has so far assigned NACs for 17 countries, of which Somaliland is the only one in the developing world. There were no existing map databases that could be converted to the NAC system – Cadastral Surveys therefore had to start the mapping process from scratch.

The NAC mapping process is a rather complex undertaking. Cadastral Surveys sends a team into the field equipped with a theodolite to survey, record and map the exact locations of fixed objects such as houses or physical landmarks, and farm boundaries. Since neighbouring farmers must agree on the location of their shared boundaries before the surveying work can begin, they tend to resolve their disputes relatively quickly. Later, concrete blocks are embedded in the ground at various points to mark the agreed boundaries.

The surveyors' measurements are recorded, and copies are sent to the Cadastral Surveys head office in Gabiley. There, the raw data are examined to correct any obvious errors and are entered into ArcView, a geographic information system (GIS) software package, to create a preliminary schematic map showing the location and area of each parcel of land. This basic map, or 'ground layer', is then emailed to NACGEO in Toronto, where cartographers superimpose onto it a rectangular grid of NAC coordinates. Any point on the map can now be identified with a unique NAC.

The new two-layer map is emailed back to Cadastral Surveys, where it is fed into the GIS database. Further layers can then be added to indicate other relevant details such as the location of wells and rain gauges. The finished product is a wall map of the area showing all the surveyed property boundaries and their coordinates, which is displayed in government and UN agency offices for all to see.

The surveyors then return to the field and paint the NACs onto the concrete 'boundary blocks' embedded in the ground. The NACs are stored in a 'master' database maintained by Cadastral Surveys, and at the Ministry of Agriculture. The Ministry uses the database to update land sale and inheritance records and, crucially, to issue laminated land registration certificates and freehold title deeds to individual farmers. The Ministry may also decide to use the database to manage the tax records for each farm.

Cadastral Surveys has so far surveyed and assigned natural area codes to 3500 farms in Somaliland. Although Cadastral Surveys has been using GIS and the NAC system for less than a year, it has already seen a massive increase in its mapping productivity as the skills of local staff have improved. In the near future a new Institute of Land, Soil and Water Surveying will be established at the University of Hargeisa, where Somalis will be able to further develop their surveying and mapping skills. The current GIS maps will also be enhanced with additional topographical data and soil and water information, which will undoubtedly be of value in the future development of the region.

The NAC system has benefited the farmers of Somaliland in many ways, not least in resolving conflicts over land and helping rebuild communities. With the boundaries clearly indicated on a map, on ID cards and in concrete in the ground, their land is now a valuable legal asset that they can use as collateral for loans and may pass on to their children.

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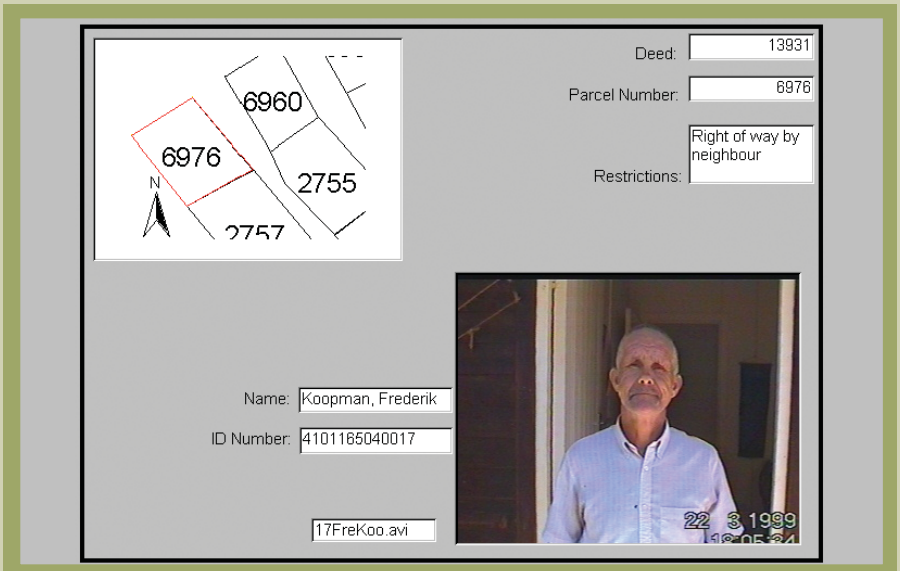
Using video testimony to formalize land rights in South Africa

Mike Barry outlines how South Africans are using video and handheld computers to provide testimony on their land rights and responsibilities.

Back in 2000, a group of researchers from the Geomatics Department of the University of Cape Town visited the village of Algeria, some 230 km north of Cape Town. Equipped with a tripod and a digital video camera, the researchers were part of an innovative pilot project to define, adjudicate and record the land rights of forestry workers who were being granted communal ownership of their land under South Africa's land reform programme.

One by one, the workers were asked to stand in front of their homes and to read aloud, on camera, an affidavit stating their name, house number and what they perceived to be their rights, interests and obligations regarding the land they occupied. They then took additional information from global positioning system (GPS) surveys to produce graphical representations of the location of land parcels. The researchers integrated the video film clips and GPS records into a geographic information system (GIS) database of 'talking head' title certificates and parcel identifiers for each resident in the village, thus providing a comprehensive official land administration record for the Algeria communal property association.

The advantages of video were evident from the start. For one, the people who were to benefit from the national land reform and land titling programmes could describe on camera aspects of their land tenure systems that might not normally have been included in written documents, thus improving the completeness of their land records. The video records would be easily understood by all community members, even those with no formal education, and the individuals claiming land rights – and the land they referred to – would be easily recognizable. The process of collecting evidence was relatively cheap and simple. Compared with the cost of hiring skilled personnel to record land tenure information, video cameras are relatively inexpensive and can be operated by the community members themselves after only minimal training.



Example of a 'talking head' land title certificate. Photo: Mike Barry

CyberTracker

As part of the project, community members were also asked to provide socio-economic data, such as marital status, family size, etc., using a handheld computer with an icon-based touch-screen interface. The system, known as CyberTracker, is easy to use in the field, even by non-literate users. Originally developed to enable trackers to monitor animal behaviour in game parks, the CyberTracker system has been adapted for land titling purposes, so that the community members can use it to gather spatially referenced data to complement or update their video testimonies.

Following the success of the Algeria project, similar video and data recording techniques have been used by the Geomatics Department to establish rights for individual land parcels in Imizamo Yethu, an informal settlement on the outskirts of Cape Town. Instead of having people prepare affidavits, the researchers conducted structured interviews with their subjects, thus ensuring the consistency of the data and video clips of similar length.

These pilot projects have been of great interest to local policymakers, who are now adapting the Geomatics Department's research methods to assist NGOs and legal teams in establishing land ownership rights throughout Western Cape province. The project findings have proven especially useful to the authorities in their efforts to put an end to land grabbing and informal settlements – two of the biggest societal problems facing South Africa today. For private developers who want to move illegal squatters off their land and into formally recognized housing areas, it is now common practice to include digital photographs in certificates of land rights. These certificates are displayed by project managers on notice boards outside community administration offices and are regularly updated to ensure that people's land rights are public and transparent. This procedure also discourages attempts by powerful individuals to manipulate the titling process for their own benefit, to the exclusion of weaker members of society. As digital video hardware and software become more widely available and affordable for use on a large scale, the current digital images may well be replaced or complemented by video in future.

Incorporating video clips as part of official land administration records is still a novel technique that holds great promise for settling land disputes and preventing the manipulation of land tenure rules. Encouraging members of a community to collect and update land tenure data using a handheld computer should ensure that existing information remains accurate and legitimate. Taken together, the two technologies have tremendous potential for enhancing land tenure information systems.

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FEATURE

SARITA: land documents – digitally signed, sealed and delivered

Suraj Kulkarni describes how a new software platform has transformed the process of registering land title documents in the Indian state of Maharashtra.

Farmer Rai Singh Bhika Padvi and his neighbour are standing in line at the local office of the Stamps and Registration Department (SRD) in Warana Nagar, in the Indian state of Maharashtra. Within just a few minutes digital images of the men have been recorded with a webcam and their thumbprints registered with a biometric scanner. The images will be included in an official document detailing the property deal the two men struck a few days ago.

Registering this document is the first and most critical step in the process of transferring formal title to land or property. The document serves as proof of identity of the new owner, and is accepted by banks as collateral for loans or other forms of credit. After adding the digital photograph and thumbprint, an SRD official stamps and signs the original document, passes it through a digital scanner and stores the image on CD. Padvi and his neighbour are then handed a printed receipt confirming the transaction. In just under 30 minutes, their deal is digitally signed and sealed, and the original document is delivered back to the customer.

Not so long ago this registration procedure would have taken many hours or even days. The improvement has been achieved with the Stamp and Registration with Information Technology Application (SARITA), a software platform developed by the Centre for Development of Advanced Computing (C-DAC) to support the computerization of the state's land registration system. Since 2002 SARITA has been introduced at 360 SRD offices, which serve 7 million customers each year and process a million pages of documents per day.

Greater transparency

Not only has SARITA cut the time and effort required of both SRD officials and customers to process documents, it has also made the land registration procedure far less complicated. The Maharashtra state government recognizes 62 different property and deed registration documents, all of which used to be stored in enormous paper-based archives. Many of these documents were never verified or updated, and often contained incorrect or false information. The system was open to abuse, and to so-called 'stamp shams' – large numbers of registration documents containing counterfeit stamps – resulting in significant losses in revenue for the government.

Thanks in large part to SARITA, fraud has been significantly curtailed. The system's foolproof security measures, such as image encryption and decryption, and the inclusion of digital photographs and thumbprints, help to prevent forgeries. Local registrars are now required to stamp and sign registration documents immediately, in view of the waiting customer, rather than behind closed doors. What's more, all local SRD offices are linked via an inexpensive dial-up Internet connection to facilitate the exchange of documents and other data between the *taluka* (villages) and the highest administrative level. The new operational transparency has prevented abuses of the system across the board.

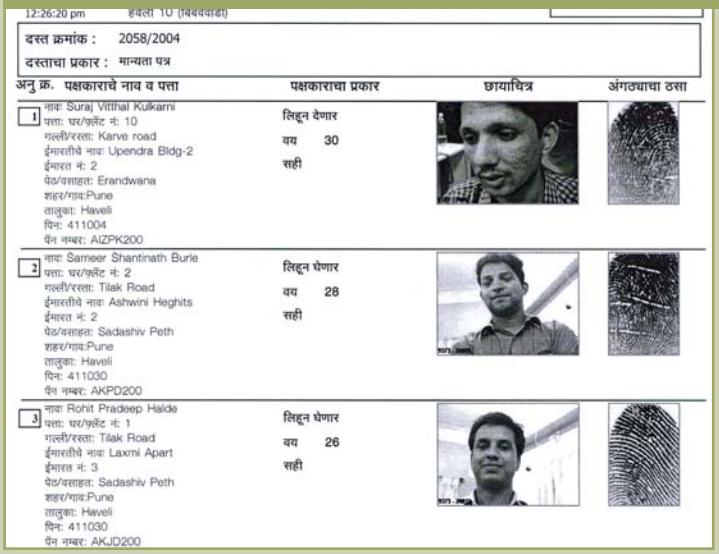
Crucially, the system has also helped to boost state government revenues. SARITA automatically checks the value of the land or property that is being registered, provides a valuation and calculates the amount of stamp duty payable. This can be carried out at the click of a button because SARITA is hooked up to databases containing land survey and property market data verified by the state government. Within just two years, the state's annual revenues from stamp duty have increased by 30%.

Public–private partnership

Another reason for SARITA's success lies in the organizational model adopted – a public–private partnership between the SRD and the private sector known as 'build, operate and transfer' (BOT). With this arrangement the state has been able to increase its property tax revenues without any capital investment. Private companies have been contracted to install, operate and maintain SARITA across all SRD offices for an initial period of five years. These companies are responsible for operating and maintaining the computer hardware, providing personnel for data entry and scanning tasks, and maintaining performance standards. The private partners operate their collective computing infrastructure on a cost-sharing basis, and are able to recover their investments by charging service fees to SRD customers. At the end of the contract period, ownership of SARITA will be transferred back to the state government.

SARITA has emerged as a truly successful e-governance application, delivering transparent and more efficient services that have provided a win-win solution for the state government, the commercial sector and the public. This public–private partnership model has the potential to transform the work of land registration agencies throughout India, and in countries across the world.

SARITA's digital photographs and thumbprints help to prevent document forgeries. Photo: C-DAC



Suraj Kulkarni (email: *surajk@cdacindia.com*) is a software developer at C-DAC. For further information, visit *www.mahaigr.org* and *www.cdacindia.com/html/about/success/egov1.asp*.

Projects and initiatives

This section lists key projects and initiatives in the field of land tenure and ICTs. Additional information is available from the web magazine at *http://ictupdate.cta.int*

AFRICA

LANDnet AFRICA is an Africa-wide network (offline and online) for governments, practitioners and policy-makers at national and regional levels. The network promotes people-centred land policies, laws and structures, focusing on land policy and legislation, improving tenure systems and protecting land rights (customary, statutory, common property based or individual). It is also working in the areas of environmental security and conflict management as well as the gender dimensions of land rights protection. *www.landnet-africa.org*

South Africa: The **South African Department of Land Affairs (SADLA)** provides access to information on land and extends rights in land, with particular emphasis on previously disadvantaged communities. SADLA comprises a number of directorates:

The **Chief Directorate of Deeds Registration** launched the electronic **Deeds Registration System (e-DRS)** for deeds and documents pertaining to land and other real rights. Access to land registration will be expanded, affording previously disenfranchised people access to the economic benefits associated with land ownership. It has developed a barcode-based **Document Tracking System (DOTS)** to track deeds and documents throughout the registration process, and to provide statistical information for administrative purposes. Clients can access up-to-date land registration information on the **e-DRS database DeedsWeb** (*www.deeds.gov.za/DeedsWeb/*)

The **Chief Directorate of Cadastral Surveys** (*http://land.pwv.gov.za/land_planning_info/cadastral_surveys.htm*) is responsible for maintaining the national **Cadastral Information System (CIS)**, which offers clients of the offices of the Surveyors-General access to digital maps of all land parcels and administrative boundaries in South Africa. Clients may request and receive information by email.

The **Chief Directorate of Surveys and Mapping** (*http://w3sli.wcape.gov.za*), the national mapping agency, is responsible for producing the **National Map Series**, aerial photography and digital spatial information products. The **MapAware Project** (*http://w3sli.wcape.gov.za/surveys/MAPPING/mapaware-intro.htm*) is promoting map awareness and map literacy among rural communities in order to support national land reform efforts. The directorate is also involved in the implementation of **TrigNet**, a nationwide network of 40 GPS base stations that provide data for land surveyors to enable them to correct land coordinates measured with their own satellite positioning equipment as part of the government's land reform programme. *http://land.pwv.gov.za/serv_products.htm*

CARIBBEAN

Guyana: Protecting indigenous people's land and resource rights in the Upper Mazaruni River Basin, a project of the **Amerindian Peoples' Association (APA)**, is supporting the poorest sector of society, the indigenous peoples, in securing ownership and other rights in and over lands, forests, waters and other resources. The APA is involved in landmark litigation involving eight indigenous communities in the Upper Mazaruni River basin, aimed at obtaining recognition of their full and inalienable title in and over the lands and resources they have traditionally occupied and used. The communities have produced maps showing their occupation and use of land and resources in and around their villages. The project provides training in map reading, use of the compass and GPS technology. Once trained, they conduct interviews with elders, hunters and women, and systematically gather and record GPS data on land and resource use and indigenous knowledge, which is recorded in log books and on working maps. The maps and log books are sent to the APA's mapping unit in Georgetown, which digitizes the base maps and converts the log book data into symbols, which are integrated into GIS maps. The maps are then printed out and sent to the communities for verification. *www.landcoalition.org/*

ASIA & THE PACIFIC

Fiji: The **Lands & Surveys Department of the Fiji Ministry of Lands & Mineral Resources** is responsible for the overall management and administration of state land and properties leased to the government. The department uses aerial photography, GIS and GPS for land surveys and is responsible for compiling and maintaining maps, plans and land records. The Department has collaborated with the **South Pacific Applied Geoscience Commission (SOPAC)** under the EU-funded project EDF8 Island System Management to create **Mape Kei Viti**, an online database of high-resolution GIS maps that show, among other things, the island's building assets, drainage systems, water resources and roads in order to assess and reduce vulnerability to environmental hazards. The maps are also of value to land surveyors and government bodies concerned with regional land tenure and ownership issues. *www.fiji.gov.fj/publish/m_lands.shtml and http://map.mrd.gov.fj*

GLOBAL

International Land Coalition (ILC) is a global alliance of intergovernmental, governmental and civil society organizations that works together with the rural poor to secure their access to natural resources, especially land, and to enable them to participate directly in policy and decision-making processes that affect their livelihoods at local, national, regional and international levels. The ILC website includes numerous ICT-supported project descriptions, research reports and articles. *www.landcoalition.org/*

International Office of Cadastre and Land Records (OICRF), a permanent institution of the International Federation of Surveyors (FIG), is a study and documentation centre for cadastre, land administration and affiliated fields, and gives legal, administrative and organizational advice. The OICRF website offers access to a database of over 3500 articles and books. *www.oicrf.org/index.html*

CGIAR System-Wide Initiative on Collective Action and Property Rights (CAPRi) is an initiative to foster research and promote collaboration on institutional aspects of natural resource management among the CGIAR's Future Harvest Centers and National Agricultural Research Institutes. CAPRi intends to contribute to policies and practices that alleviate rural poverty by analyzing and disseminating knowledge on the ways that collective action and property rights institutions influence the efficiency, equity and sustainability of land tenure practices and natural resource management. The website offers access to an extensive series of working papers (*www.capri.cgiar.org/pubs.asp*) and the **CGIAR Inventory on Property Rights** and **Collective Action Projects database** (*www.capri.cgiar.org/inventory.asp*). *www.capri.cgiar.org/capri.htm*

Q&A: ICTs and land valuation services in Jamaica

Knowing the exact value of a piece of land is essential both for local governments, to enable them to levy appropriate taxes, and for farmers to calculate their annual budgets. Yet in order to establish the value of land, both parties often have to find their way through a tangled web of organizations, rules and documentation. ICTs may help to simplify the process and save precious time. **Adrienne Mullings** explains the work of **Jamaica's National Land Agency (NLA)** and eLandjamaica, an online information system that now provides a single point of entry to the agency's land valuation services.

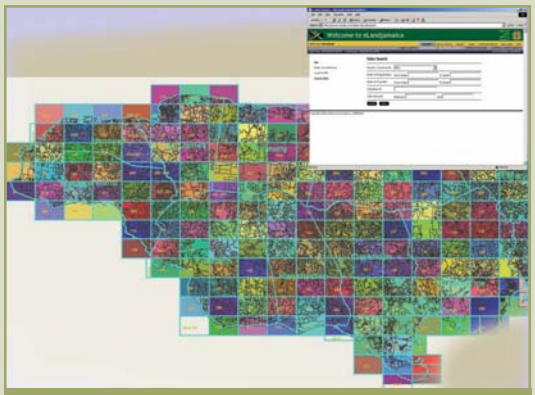
What is the background of the NLA?
The Jamaican government established the National Land Agency in 2001 as part of its ongoing public sector modernization programme, aimed at improving the services available to farmers and other landowners. The NLA effectively brings together the activities and services of four previously separate government departments: land titles, surveys and mapping, land valuation and estate management. The merger of these departments provided the authorities with an opportunity to consolidate their multiple databases and document management systems into a single, coherent system. This resulted in the implementation of an automated Land Registration and Parcel Data Management System (LRS/PDMS), which has transformed the previous largely manual national land titling procedures, and eLandjamaica, a web-based property search service (*www.nla.gov.jm/eland01.html*).

What land valuation services are available from eLandjamaica?
One of eLandjamaica's main advantages is that it gives online access to the NLA's valuation roll, which serves as the official inventory of all properties in Jamaica and is used as the basis for land tax assessment. The valuation roll includes a physical description of each property, its address, the name or names of its owner or tenant, its net annual rental value and total market value in Jamaican dollars.

The value of a piece of land depends on, among other things, its use (residential, agricultural, commercial, etc.) and the economic climate. Jamaican law requires that property is revalued 'as near as may be every five years' in order to reflect current rental or sale price levels, and to adjust property tax levels accordingly. The most recent revaluation exercise was completed in 2002, and the resulting 680,000 valuation roll reports may be accessed through eLandjamaica.

How can this information help farmers?
Through eLandjamaica, farmers can now inspect the valuation roll and assess whether they are entitled to tax relief. In an effort to support the country's farming sector, the government offers 'agricultural derating' grants to landowners who use a substantial proportion of their land for agricultural production. These grants constitute a 50% property tax exemption.

For farmers who live in remote areas of the island, having online access to such information can save much valuable time. They no longer need to visit the NLA head offices in Kingston but can connect to the Internet from their own homes or a local NLA office.



eLandjamaica offers online access to Jamaica's valuation roll and to a wide range of other information, including GIS-based maps and land titles. Photo: NLA

How is eLandjamaica benefiting the tax authorities?
The government relies heavily on property tax revenues to fund important services such as education and health care, and is therefore working to improve the efficiency and transparency of the tax system. In particular, it is hoped that by making official, undisputed records of land values more widely available this will discourage land speculation and fraud. eLandjamaica offers a single point of entry, enabling NLA officers to share land valuation and other land-related data with other government agencies and private-sector organizations. As a result, they can create a more consistent picture of the relations between land use in a particular area and its tax burden, and so may more easily adjust property tax policies to support the local economy.

The launch of eLandjamaica has transformed the work of many local authorities. The staff no longer spend their time helping people search through valuation rolls, or creating and maintaining paper archives. Through eLandjamaica the public can now access directly a wealth of information online. Website user statistics show that the numbers of requests for certificates of title and other land-related documentation have risen steadily. This is also partly thanks to NLA's successful efforts to reduce transaction times. The NLA's improvements in service delivery are making a significant contribution to the government's overall goal of strengthening the island's real estate and land markets.

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