

Helpdesk Research Report: Land transparency programmes and land data platforms

11.01.2013

Query: Identify evidence of successful land transparency programmes, focusing on how these programmes were delivered, challenges encountered and how these were overcome. Identify examples of successful pilots of national land data platforms that could be scaled up and assess whether these are the same as online land registers. If available, provide details of the costs associated with developing a public and open database.

Enquirer: Growth and Resilience team, DFID

Author: Oliver Walton (oliver@gsdrc.org)

Contents

1. Overview
2. Successful land administration programmes addressing transparency
3. National Data Platforms
4. References
5. Additional Information

1. Overview

Land administration in developing countries often fails to be pro-active and service-oriented, inclusive, and pro-poor (Zimmerman 2006). These failures can lead to a range of issues including corruption, fraud, extortion and human rights violations (ibid.). Findings from a Transparency International survey in 2009 suggest that the government bodies which oversee the land sector are one of the public entities most plagued by service-level bribery (TI 2011).

Several countries are currently reforming land policies and introducing new approaches to land administration. These efforts generally involve providing legal recognition to tenure rights that are considered legitimate but are currently not protected by law. A second step may involve promoting more transparent and effective land certification and registration systems (TI 2011).

The next section of this report provides some examples of land administration programmes that have attempted to improve transparency. Section 3 identifies examples of pilot programmes to establish a National Spatial Data Infrastructure (NSDI) or a National Land Information System (NLIS).

2. Successful land administration programmes addressing transparency

This section gives an overview of land administration programmes that have attempted to improve transparency (in most cases the effort to improve transparency has been accompanied by other related goals). It describes the key features of these programmes, challenges faced and how these have been overcome. These programmes varied considerably in their design, addressing transparency in a variety of ways – by conducting awareness raising programmes (Cambodia, Burkina Faso, Senegal), publishing new maps or databases online (India, Indonesia) or decentralising registration processes (Ghana). These programmes typically involved a range of components – for example, providing legal support to government land reform efforts, supporting computerisation, awareness-raising and building capacity. A number of common challenges were identified from the cases examined below and the broader literature.

- The programmes took **more time and required more resources** than first anticipated (Benin, Burkina Faso, Cambodia).
- **Existing capacity was low** and took time to build up (Benin, India, Ghana).
- **Stakeholder commitment was low** (Cambodia, Nigeria, Ghana).
- **Computerised systems were costly to sustain** (Tengnäs et al 2010).
- Improvements in land administration are closely linked to broader improvements in governance (TI 2011).
- **Lack of broader contextual analysis:** ‘Interventions appear to have been based on rather shallow assessments that have less seriously taken into account the needs and perspectives of people living in poverty’ (Tengnäs et al 2010, 6).

The following common approaches/actions were taken to address these challenges.

- A number of studies stress the importance of a **comprehensive approach** to land administration reform (Zimmerman 2006, Bell 2009, TI 2011). Such an approach involves tackling a broad range of barriers to land transparency including lack of implementation capacity, poor record management practices, organisational culture and lack of public awareness.
- **Incremental approach:** ‘[g]iven the complexity and sensitivity of land policies, a progressive approach and adaptive management is required for implementation, such as using the results from pilots, and continuous dialogue and monitoring of progress, as stepping stones before going large scale’ (Hilhorst 2010, 46 - see also Burkina Faso, India cases).
- **Rigorous institutional/ contextual analysis** (Benin, Nigeria, Indonesia).
- **Ensuring buy-in from key stakeholders** (politicians, private sector) (Benin, India, Indonesia, Nigeria).

There appears to be a **general lack of evaluations of programmes focusing on land transparency**. A review by the Swedish International Development Cooperation Agency (SIDA) of around 100 interventions relating to land issues, conducted between 2000 and 2010, stated that ‘evaluation coverage is rather meagre...a majority of reviews and evaluations have been conducted during or soon after the implementation period and, consequently, often been more concerned with constraints in implementation and intervention outputs than with the outcomes and impacts’ (Tengnäs et al 2010, 5).

Programmes

The Millennium Challenge Account's (MCA) Access-to-Land Project in Benin was designed to improve land tenure security and land administration in urban and rural areas. The urban component targeted upgrade of land occupancy certificates to full civil law titles. The Rural Land Rights Mapping (PFR) component targeted recognition and certification of land held under customary rights by mapping agricultural fields and defining rights under custom in 300 villages. One of the key **challenges** identified in a report by Elbow (2012) was reconciling the relatively short project timeframe (five years) and the long-term formalisation project. It concludes that 'in retrospect it seems likely that the project **underestimated time needs** regarding both start-up and closeout activities' (Elbow 2012, 4). Implementing the PFRs required considerable human, logistical and financial resources.

The report also **questions whether communes were sufficiently prepared** to appropriate the new PFR databases and especially to achieve the intended use of the land information systems for delivery and subsequent tracking and updating of the new rural land titling instrument – land certificates. The report highlights the **importance of including post-project consolidation strategies and plans in the programme design**. If the formalisation process is to prove sustainable, the project needs to provide sufficient time and support to developing capacity (Elbow 2012).

The project also sought to identify and document the secondary land property rights of vulnerable populations (including women, youth and non-sedentary livestock producers). The report finds that the time requirements for development and validation of standardised land contract forms and other formalities were greater than anticipated. The report concluded that 'secondary rights to land that exist under customary land tenure systems are not easily or always identified during property rights inventory exercises'. This means that 'land property rights formalisation programmes carry a risk of erosion or loss of secondary rights, particularly on the part of vulnerable populations' (Elbow 2012, 8).

The report argues that many balancing acts are necessary to embark on land property rights formalisation including striking a balance 'between sometimes vague parcel boundaries and exacting global positioning technology; between traditional farmers, government bureaucrats and skilled private sector technicians/entrepreneurs; and at the level of policymakers and government institutions, between such goals as increased agricultural production and enhanced tax revenues' (Elbow 2012, 9). In Benin, land management and administration roles and responsibilities are distributed across a variety of agencies and the MCA PFR programme, therefore, relied on effective management of partnerships and coordination across these government agencies. The report recommends that 'wherever possible, technology choices and standards...should be fully debated and validated by all interested parties during project design rather than left for resolution during project implementation'. Identifying 'all interested parties' can require 'rigorous analysis of the institutional context' (Elbow 2012, 10).

MCA Rural Land Governance (RLG) Project in Burkina Faso has three components: Legal and Procedural Change and Communications (which involved supporting government tenure reform efforts and raising awareness), Institutional Development and Capacity Building of Government Agencies, and Site-Specific Land Tenure Interventions (which targeted clarification and registration of individual land property rights in up to 10,000 hectares of agricultural development areas). The project highlighted the difficulty in fulfilling or anticipating 'each of the myriad needs that arise in the wake of a sweeping policy change' such as the one that occurred in the Burkina Faso context (Elbow 2012, 13). Some legislative needs were anticipated but have taken longer to resolve than was scheduled at the

outset. The project emphasises the need for testing and experimentation, and therefore the importance of pilots. The project also highlights the importance of a strong communications strategy to accompany land formalisation activity: '[t]he communications plan should have multiple components that complement and back-up each other to achieve maximum buy-in and participation on the part of all...stakeholders' (Elbow 2012, 18).

MCA's Land Tenure Security Activity (LTSA) in Senegal is a component of a broader Irrigation and Water Resources Management Project. One element of this LTSA component aims to improve popular participation in local land policy formation. This involved using local committees to comment on land allocation principles and feed into the government's own principles. The report concludes that this process helped to strengthen buy-in to the broader land formalisation initiative (Elbow 2012).

Bhoomi Project in Karnataka, India: *Bhoomi* (meaning 'land') is a project jointly funded by the Government of India and the Government of Karnataka to digitise the paper land records and create a software mechanism to control changes to the land registry. The project was designed to eliminate the long-standing problem of inefficiency and corruption in the maintenance of land records at dispersed and poorly supervised and audited local-level offices. The programme set up computerised land record kiosks in 140 of 177 local-level offices or 'taluks'. Farmers could obtain a copy of any Record of Rights, Tenancy and Crops (RTC) for a small fee (Rs. 15). They could also use the kiosks to file for a mutation of the land record when a change of ownership takes place (Chawla 2001). Manually written RTCs were declared illegal from the day on which the computerised system became operational in a *taluk*. This forced the department and the farmers to rely completely on the new system. Chawla (2001) argues that *Bhoomi* has reduced the discretion of public officials by introducing provisions for recording a mutation request online. Farmers could access the database and were empowered to follow up. Reports on overdue mutations pointed to errant behaviour.

Chawla (2001) highlights a number of **implementation challenges** associated with the *Bhoomi* project including the following.

- Roll-out of the application to 177 locations has been a challenge due to the '**poor quality of manual records and the enormity of the data entry task**'. The project was rolled out gradually (starting in four *taluks*, then spreading to one *taluk* in each of the 27 districts, and then finally to all 177 remaining *taluks*') (Chawla 2011, no p.n.).
- 'Records in the field were not up-to-date due to **poor work culture and lack of training amongst revenue staff**. Private data agencies tackled the 20,000 man-months of work of updating the registry. This process was slow and error prone due to poor work quality by data entry agencies' (no p.n.).

These **challenges were addressed** in the following way.

- Operators were provided for one year to handle online data entry at the *Bhoomi* kiosks. Village Accountants took over the work from these operators after a year. A comprehensive training module was designed to train the Accountants. The Village Accountants appointed to be in charge of the new kiosks were chosen very carefully. Recent graduates were recruited and trained at the headquarters. These officials had not experienced the power that a Village Accountant could exercise over rural farmers.
- To allay the fears of field officials that their job descriptions would change in a major way, twelve state level information seminars were organised for 1,200 senior and mid-level officers.

- The political executive was completely involved in the computerisation project. The State Chief Minister and Revenue Minister highlighted the importance of the project in many public fora.
- **Field supervision** was critical: 'The project leader in-charge preferred to appoint four independent consultants who could tour sites randomly in each division and report problems and progress of *Bhoomi*'.
- A **champion** worked a 15-hour day for over 12 months, 'devoting 80 per cent of his time to the project. Minimising resistance from staff by harnessing political support was an important contributory factor. Extensive training coupled with a participatory style also helped to diminish resistance'.
- Project managers **balanced 'the potential benefits against the risk of implementation failure** in deciding how much reform to tackle at any one time. In *Bhoomi* significant benefits are delivered in issuing RTCs, but much of the old mutation process remains unaltered. As there is no change in the role of Revenue Inspector in passing the mutation order, corruption in the mutation process may not necessarily reduce' (Chawla 2001, no p.n.).

Van der Molen (2007) notes that computerisation alone does not curb corruption and cites examples where officials in *Bhoomi* asked for bribes to correct mistakes, which they had introduced themselves.

Moratorium on forest conversion, Indonesia: The Indonesian Government has attempted to tackle land transparency issues by conducting a moratorium on forest conversion (under the Letter of Intent between Indonesia and Norway). The moratorium contributes to a wider programme for reducing carbon emissions from deforestation and forest degradation (REDD+) (Ardiansyah 2011). Through the moratorium, the Indonesian Government has, for the first time, established a single indicative map of land use, incorporating and integrating four different maps from the Forestry Ministry, the National Land Agency, the Agriculture Ministry and the National Survey and Mapping Agency. The map has been revised three times. The map is also shared publicly online where members of the public can check and report any issues related to the map (expert comments). The case of peat swamp forest burning in Tripa (Aceh Province) reported by NGOs and media illustrates the importance of the map. NGOs and media reported the case and sent a letter to the Indonesian president, highlighting the swamp forest. The story gained global media coverage. Ardiansyah (2011, no p.n.) stresses that the future of the moratorium and the REDD+ strategy 'requires more than reconciling legal uncertainty. The initiative needs to enlist the support and engagement of businesses, individual actors and layers of government that are influential in causing changes in the patterns of land use'. He also emphasises the need to further improve 'data quality and transparency to show protected and unprotected areas, including fallow and degraded lands' (no p.n.).

Customary Land Registration Programme, Indonesia: Another example of a successful land transparency programme in Indonesia is a customary land registration programme initiated by an NGO called AMAN (Alliance of Indigenous People in Indonesia). AMAN encouraged indigenous people and/or communities around Indonesia to register their customary lands and compiled these records into a single map. AMAN then contacted the president and some ministries/agencies and lobbied them to incorporate the map/registration as part of Indonesian land use registry/system (expert comments, Sahab & Amir 2012).

Land Administration reforms in Cambodia: Torhonen and Palmer (2004) review land administration reforms in post-conflict Cambodia. The study draws the following main conclusions: 'systematic first registration can be feasible; a post-conflict situation is likely to boost both the community participation and donor interests; and a unified donor community can be an important

catalyst for policy promotion, but that the **process is slow and that sustainable results can only be gained over a long term**' (ibid.1).

Several donors provided funding to the Cambodian government in 1995 to improve the land administration situation. 'For a few years the Government of Cambodia embarked on **pilot projects** for a systematic land registration. In Cambodia, systematic parcel-by-parcel land registration...looked for feasible and democratic ways of registration from legal, economic and human rights points of views. The system was designed to be handled by a single officer utilising landholders as surveying assistants. The protection of people's rights was to be dealt in the public awareness campaign that had to be accessible to every landholder. Equally, the adjudication and the demarcation had to be accessible to every landholder, and in the end all landholders had to have a right to study all recorded information and appeal against it in an organised manner. It was recognised that an appropriate technical result in Cambodia would be flexible in terms of surveying accuracy and boundary marking' (ibid. 7).

'The developed, tested and now adopted system consists of six parts: the public awareness campaign (later the public information), the adjudication, the demarcation, the surveying, the documentation and the public display (later the appeal)...Adjudication was to be executed simultaneously with the demarcation, which proved to be feasible and to save costs. In case of disputes, an initial attempt was made to negotiate the settlement, and if a decision could not be reached, an appeal process was followed' (ibid. 8).

'All data, digitised boundary layers and numerical land register data, were integrated through the Unique Parcel Reference Number, which follows the administrative organisation. The records were accessed through a simple GIS interface...and outputs can be produced semi-automatically' (ibid. 8). Assistants were provided to marginalised groups (such as the illiterate or disabled) to assist them in making appeals against records....This procedure was tested for two years and the legal provisions for their use were adopted in early 2000. Some forty thousand parcels were recorded during the piloting stage and the results were encouraging. **The procedure worked well and problems were rare.** The main hindrance experienced in the process was caused by the **ambiguous legislation.** For example, the limitations of public and private land were not clearly defined in the legislation making it difficult to define these lands on the ground' (ibid. 9).

The main negative consequence was that it proved a lot harder to reform the land register than to reform the method of first registration. The pilot first registrations resulted in a backlog in registration and title issuance, and only through a rather painstaking process was the backlog cleared. The land register was currently undergoing reform at the time Torhonen and Palmer's (2004) report was written. The systematic registration system was improved by expanding a public awareness campaign, increasing the direct participation of local communities in the facilitation of the registration process and fine tuning the method for the urban areas.

Land Allocation For Economic and Social Development Programme, Cambodia: A study by Muller (2012) draws lessons from the LASED programme in Cambodia, which aims to provide land titles for existing land use on state land. The experience of the programme, launched in 2005, highlights the need for a more complex political, legal and spatially-planned approach for a mix of new instruments that include the regularisation of unauthorised land use by the poor and partnerships between big and small holders. Muller (2012, 16) finds that land distribution through LASED was successful in creating transparency, but LASED 'missed the participation of private sector investors who were important competitors for state land'.

Pilot Awareness Raising Project, Rwanda: Santos et al (2012) examine a land reform pilot conducted by CARE International, in partnership with the National Land Centre and local NGOs. The project combines local capacity building, awareness raising and public dialogue events in an effort to ensure that the Government of Rwanda's Land Tenure Regularisation Programme formalised land rights in a participatory and socially-inclusive manner. They find that the LTR process in general had been highly participatory – most participants interviewed found the programme accessible. They also found that the CARE project had had a gender- and wealth-equalising impact on the people who participated in LTR meetings. They found that the pilot had been particularly effective at enhancing men's and women's perceptions of their tenure security. These findings suggest that a post-LTR support programme would be a cost-effective approach for further strengthening tenure security and paving the way for increased investments. The LTR process paid attention to gender in general, but appeared to work against unmarried women and women from very poor households, who were less likely to be named on land titles. They suggest that alternative mechanisms should be considered for dealing with this – for example by building in the consent for transfers of land from cohabiting partners and a request that their names be included on any new documents or records.

Abuja Geographic Information Systems (AGIS), Nigeria: Akingbade (2012) examines this programme which aims to strengthen governance by developing a digital system of cadastral records for electronic land administration and provide additional geospatial data and services in the Federal Capital Territory (FCT) of Nigeria. The study finds that 'the attachment of supply-side stakeholders to the project over time was not steady and the **mobilisation of the demand-side stakeholders for the implementation of the project was weak**. AGIS was also unable to impose itself as an obligatory point of passage between the supply- and demand-side stakeholders' (Akingbade 2012, 161).

Akingbade (2012) concludes that 'computerisation administrators in Africa should appreciate that initiatives like AGIS **can be significant beyond a narrow emphasis on technology...they can be influenced by and also influence social, institutional and political changes and interests of stakeholders**'. He recommends that the success rate of e-land administration initiatives in Africa can be improved by 'being cognisant that standards, personnel development policy, financing, political and legal support are critical success factors when implementing GIS in the public sector' (ibid. 161-162).

The report finds that although AGIS helped to reduce some kinds of corruption such as forgery, bribery and fraud, other types of corruption (including nepotism and favouritism) actually increased. The study, therefore, concludes that 'computerisation and high-end e-LA solutions are not a panacea for corruption in the provision of LA services. In the same vein, e-LA does not automatically increase effectiveness in land-related public sector management (ibid.162).

Second Land Administration Project for Ghana: This World Bank-funded project aims to consolidate and strengthen land administration and management systems for efficient and transparent land service delivery. There are four components to the project. The first component of the project supports the completion of land law reforms, preparation of regulations and collaboration with the judiciary in establishing new land courts; the second component aims to improve transparency and reduce time and cost of delivering the service through a re-engineering and decentralisation of business process and automation; the third supports the preparation of base maps and other spatial products to support land transactions and street addressing system; and the fourth component aims to develop the capacity requirements for land administration service provision, as well as project management (World Bank 2012).

A review of an earlier phase of this project concluded that ‘successful implementation of GIS to support land administration in the lands sector in Ghana will be confronted with a series of challenges: the need to provide frameworks within which GIS can evolve as a tool in an orderly way in the Land Sector Agencies; the need to find ways to democratise GIS in land administration and management systems and structures within Ghana; the need to generate designs that are innovative and practical so they will meet specific land sector needs; and the need to provide support infrastructure and services that will enable GIS to operate effectively and efficiently in the lands sector in relation to other sectors’ (Karikari 2006, 17). Karikari (2006, 17) argues that each of the six agencies involved in land administration will have to be re-engineered. This involves identifying weaknesses, inefficiencies and instances of duplication – recognising that the most important problems to be overcome in improving land information practices will be organisational, managerial and human based, not technology-related.

3. National Land Data Platforms

The term ‘national land data platforms’ is not widely used in the literature and therefore it is difficult to assess whether this term is used in the same way as ‘online land registers’. At the suggestion of experts, this report has focused on efforts to generate National Land Information Systems (NLIS) as a component of National Spatial Data Infrastructure (NSDI) (expert comments). Land administration projects often uncover duplication of data capture. NSDI are frameworks of ‘spatial data, metadata, users and tools that are connected in order to use and manage spatial data in an efficient and flexible way. Another definition is the technology, policies, standards, human resources and related activities necessary to acquire, process, distribute, use, maintain and preserve spatial data’ (Carter & Heuangsavath 2007, 8). NSDI ‘encompasses not only the data, but the official designation of custodians’ (Bell 2009). Many countries are developing NSDI with the aim of supporting institutional reform, helping to lower costs and expand sustainable rural outreach (Carter & Heuangsavath 2007).

The desk research conducted for this report identified a number of examples where an NLIS or NSDI had been successfully introduced or enhanced. In most cases these involved the use of regional or local pilots. The research also identified one recent pilot (conducted in Kenya), though it is difficult to assess whether or not this should be judged as successful. No documents were identified that provided details of the costs associated with developing a public and open land database, though a report on a World Bank project from 2003 stated that a component to develop a cadastre and LIS cost US\$16.3 million (World Bank 2003).

Most of the cases identified below did not mention establishing ‘online land registers’, though most did involve the digitisation of land data. The Rwandan case discussed below mentions the goal of establishing an online database or ‘geo-portal’, though no detail was provided about whether or not this portal would be open and public. As discussed in the last section, the *Bhoomi project* in India and the *Moratorium on Forest Conversion* in Indonesia both involved open online components. Although better access to information may lead to improved transparency, Bell (2009, 19) stresses that this depends on ‘whether good governance prevails with laws being appropriately enforced and civil servants acting ethically and in the public good’. He also emphasises that in order to fully realise the benefits of these technologies, the land registration system itself needs to be “in order”, containing reliable data, and focused on holding a complete inventory of land parcels, both state and private’ (ibid.18). The public must also have confidence in the government’s land administration system (ibid). Enabling land administration services to be accessed online can increase transparency but it may also increase the risk of e-corruption (Zimmerman 2006).

Pilot NSDI/NLIS Projects

Pilot project to establish a pro-poor Land Information Management System (LIMS), Kenya:

Mwathane et al (2012) conducted a pilot study that focuses on Kiandutu slums in Kenya and propose the use of geospatial technology in the provision of information for planning and decision-making in line with the National Land Policy and the Constitution. 'The study aims to provide a solution to mitigate challenges on land tenure, shelter, services, poverty and empowerment in...informal settlements. The study recognises that the Government has made a policy commitment to establish a comprehensive, computer based, efficient, user friendly, accessible, affordable, transparent and gender sensitive land information management system. The study will note and review the ongoing efforts by the Ministry of Lands to develop a National Land Information Management System (NLIMS) with a view to establishing what efforts or mechanisms if any, have been made to provide for the inclusion of information from Kenya's informal settlements into the system. This study is expected to contribute to this effort' (Mwathane et al 2012, iv). The study notes that the NLIMS initiative is in the early stages. The report states that 'following the results of this study, pertinent spatial data from Kiandutu will need to be collected and processed. This will be followed by the design of the LIMS technical solution, inclusive of its database. This will then be tested and implemented to guide the necessary planning, resolution of tenure issues and subsequent upgrading of services in Kiandutu. It is projected that the activities necessary to ensure the development of the system in phase two will require about one year to complete' (ibid. vii).

Pilots conducted to implement Land Information System (LIS) in Uganda: In 2010, International Land Systems (ILS) announced that it had entered into a three-year World Bank-funded contract to improve Uganda's land administration systems. The announcement states that as part of a wider project to improve the international competitiveness of the Ugandan private sector, 'the Design, Supply, Installation, Implementation of the Lands Information System and Securing of Land Records' (DeSILISoR) supplementary project will establish a modern national land information system and land records archiving system to underpin future enterprise creation and growth and increase public access and tenure security. Through the pilot project, a transparent and efficient land management system will help to mitigate the current difficult processes associated with obtaining and transferring evidence of land ownership as well as generating a more attractive environment for investment'. 'By digitising land records, streamlining and automating the registration process the public and businesses will be able to more easily determine land rights as well as possibly gain documented rights to land and property' (GRM 2010, no p.n.).

A later report by Gil (2012) on the DeSILISoR project provided an updated assessment of the project. It states that the project aimed to 'achieve an optimisation of land administration business processes through a modernisation of the registry and cadastral offices including changing of the organisational culture, training and capacity building, introduction of the systematic use of computers at the workplaces and implementation of the LIS at the Survey and Mapping Department, Central Registration Office in Kampala and 6 pilot districts in order to prepare for further roll-out for the entire country' (Gil 2012, 2). The Land Information System (LIS) has been 'designed to simplify information-sharing between the stakeholders and integrates registration documents with cadastral data through the modules of Cadastral and Registration Management software based on the Geographic Information System (GIS). An LIS is intended to be used to perform a number of tasks – including land registration, creation and maintenance of the cadastral records, collection of the registration fee; it is also intended to be used in the future for physical planning and real estate valuation and taxation' (Gil 2012, 4).

Pilot to establish a digital cadastre in Laos PDR: A report by Carter and Heuangsavath (2007) provides details of a pilot project to establish a digital cadastre in Laos PDR. The pilot was 'designed to test the quality of existing data for both accuracy and completeness...[and]...assess the capacity of institutions and their willingness to share information'. The project was designed to respond to the 'need to increase accessibility and integration of spatial information to use up-to-date information to supplement decision making, strategic planning and land management' (ibid. 8). Accessibility has been difficult due to the reluctance of agencies to share information and integration has been hampered by the absence of a proper medium for which to transfer spatial information. The report concludes that: 'The Project is developing a fundamental data infrastructure for future land administration and land management functions in Lao PDR. In support of this, cadastral surveying and mapping activities are utilising digital technology to increase the accessibility and integration of cadastral information. There are enormous benefits from this, especially when the cadastral framework is overlaid with other land information within a GIS. However, such a system is expensive, and the challenge facing government is to develop partnerships which ease data access and use while financially supporting the development of digital data' (ibid. 12).

Pilot to support establishment of a geo-portal in Rwanda: In 2007, a pilot project was sponsored by the Global Spatial Data Infrastructure Association (GSDI) at the Centre for Geographic Information Systems and Remote Sensing Centre of the National University of Rwanda (CGIS-NUR). The aim of this project was to accomplish a geo-data inventory representing the spatial data holdings of CGISNUR, establish a sample web mapping service and upload the gathered information to a geo-portal. Although the initial focus was narrowed down to CGIS-NUR, the overall goal was to facilitate the development of NSDI in Rwanda. The project contributed to the establishment of an NSDI plans a part of National Information and Communication Infrastructure (NICI) Plan in Rwanda (Warnest & Hogarth 2011). Rwanda's new Land Administration Information System was launched in 2011. A report by the Investment Climate Facility for Africa (ICF) – who jointly funded the system – stated that the new registration system is 'fully automated and possesses a simplified registration process for land titles'. The report also states that 'an accurate database will...be maintained' (ICF 2011, no p.n.).

National Spatial Data Infrastructure (NSDI) development in Botswana: 'The government of Botswana embarked on a project of establishing a NSDI in 2002. The project was co-funded by the Botswana Government and the Swedish International Development Agency (SIDA), hence consultants from Swedesurvey (Swedish company) were engaged to kick start the project. The project was divided into two phases. The first phase involved providing the first technical facility (metadata) services, establishment of institutional bodies and setting of first standards'. Manisa and Nkwae (2007, 10) note that this phase 'would be evaluated in terms of meeting its objectives. The second phase was to ensure that all the institutional bodies formed in the first phase are up and running more especially the secretariat' (Manisa & Nkwae 2007, 10). Nkambwe (no date) describes how 10 pilot projects were rolled out to computerise land data in Botswana. He notes that 'the lessons learned from the various pilot projects did not seem to provide cumulative experience. The fact that none of them were completed as they had been originally designed (i.e. beyond the original ward used to design and test the techniques to be used) left, all these limited the value of the lessons learned even in individual pilot projects' (Nkambwe no date, 115).

Other examples of programmes to introduce NLIS

Integrated Land Registration System in Burkina Faso: ICF is currently supporting the Burkina Faso government to develop and introduce an integrated registration system that will interconnect all agencies involved in land, business and construction registration. This system will provide a single

point of entry for lodging transaction documents and will allow submission, receipts, processing and approval of registration permits. 'This project builds on previous work done with ICF to improve registration services in the country. This involved the establishment of One Stop Shops for land and business registration and at the same time reduced the number of procedures needed for registration. As a result, the numbers of registration have increased and businesses have been able to register much more quickly. The new interconnection project will deliver further improvements in transaction numbers and reductions in costs, procedures and time' (ICF 2012, no p.n.).

Ghana Land Administration Project: The World Bank funded a Land Administration Project in Ghana, which was appraised in 2003 (World Bank 2003). The project was designed 'to develop a sustainable and well-functioning land administration system that is fair, efficient, cost effective, decentralised and that enhances land tenure security. The original project description provides the following detail: 'The project would provide for an establishment of such computer-based LIS which is secure and the training of staff on its operation. Designing the LIS and its operation will involve the participation and collaboration of the Survey Department, Land Title Registry, Land Commission, Land Valuation Board and Town and Country Planning Department towards achieving the common goal of an effective LIS'. The cost of the whole project was US\$55.5 million. The 'Developing the Cadastre and LIS' component cost US\$16.3 million (World Bank 2003).

4. References

Akingbade, (2012) 'E-land Administration in the context of e-government in Africa: An evaluation of Nigeria's Abuja Geographic Information Systems (AGIS)', ITC Dissertation No. 216, University of Twente. http://www.itc.nl/library/papers_2012/phd/akingbade.pdf

Ardiansyah, F. (2011) 'Indonesia's forests: a year into the moratorium', East Asia Forum, August 4th 2012. <http://www.eastasiaforum.org/2012/08/04/indonesia-s-forests-a-year-into-the-moratorium/>

Bell, K. (2009) 'Trends in Land Administration and Management with Particular Reference to World Bank Support for Projects in the East Asia Region', International Federation of Surveyors Article of the Month November 2009. http://www.fig.net/pub/monthly_articles/november_2009/november_2009_bell.pdf

Carter, D. and Heuangsavath, B. (2007) 'Moving from a Successful to a Modern Cadastre in Lao PDR', Strategic Integration of Surveying Services, FIG Working Week 2007, Hong Kong SAR, China, May 13-17 2007. http://www.fig.net/pub/fig2007/papers/ts_6a/ts06a_04_carter_heuangsovath_2211.pdf

Chawla, R. (2001) 'Bhoomi: Online Delivery of Land Titles in Karnataka, India', World Bank e-government website. <http://go.worldbank.org/1E5AXCJB80>

Elbow, K. et al (2012) 'Emerging lessons from initiatives to formalise customary land rights and local land management practices in Benin, Burkina Faso and Senegal', Paper presented at the Annual World Bank Conference on Land and Poverty 2012. http://www.landandpoverty.com/agenda/pdfs/paper/elbow_full_paper.pdf

- Gil, S. (2012) 'LIS Development Project and Measures Proposed to Enhance Trust in the Land Administration System in Uganda', Paper presented at the Annual World Bank Conference on Land and Poverty 2012. <http://bit.ly/13geHAy>
- GRM (2010) 'Government of Uganda Turns to ILS to Establish a Pilot National Land Information System', Global Resource Management website. <http://grm.thomsonreuters.com/news/july-2010/government-of-uganda-turns-to-ils-to-establish-a-pilot-national-land-information-system/>
- Hilhorst, T. (2010) 'Decentralisation, Land Tenure Reforms and Local Institutional Actors', Land Tenure Journal. http://www.kit.nl/net/KIT_Publicaties_output/ShowFile2.aspx?e=1717
- ICF (2011) 'Modern Rwanda Land Administration Information System Launched', The Investment Climate Facility for Africa website. <http://www.icfafrica.org/news/79/modern-rwanda-land-administration-information-system-launched/>
- ICF (2012) 'Burkina Faso to improve business and land registration', The Investment Climate Facility for Africa website. <http://www.icfafrica.org/news/1285/burkina-faso-to-improve-business-and-land-registration/>
- Karikari, I. (2006) Ghana's Land Administration Project (LAP) and Land Information Systems (LIS) Implementation: The Issues, International Federation of Surveyors Article of the Month, February 2006. http://www.fig.net/pub/monthly_articles/february_2006/karikari_february_2006.pdf
- Manisa, M. and Nkwae, B. (2007) 'Developing Botswana Spatial Data Infrastructure: From Concept to Reality', Strategic Integration of Surveying Services FIG Working Week 2007 Hong Kong SAR, China, 13-17 May 2007. http://www.fig.net/pub/fig2007/papers/ts_1d/ts01d_04_manisa_nkwae_1376.pdf
- Muller, F-V. (2012) 'Commune-Based Land Allocation for Poverty Reduction in Cambodia', World Bank Annual Conference on Land and Poverty 2012. http://www.landandpoverty.com/agenda/pdfs/paper/muller_full_paper.pdf
- Mwathane, I. et al (2012) 'Pilot Project to establish a Pro-Poor Land Information Management System (LIMS) for part of Thika Municipality', Land Development and Governance Institute. <http://bit.ly/XjGGv9>
- Nkambwe, M. (no date) 'Land Information Systems Development and the National Spatial Data Infrastructure in Botswana'. http://www.isprs.org/proceedings/XXXIV/6-W6/papers/musisi_lis.pdf
- Sahab, N. and Amir, S. (2012) 'Indigenous Map Handover, Stepping towards One Map and Recognition', Satgat REDD+ website. <http://www.satgasreddplus.org/en/component/k2/item/58-indigenous-map-handover-tepping-towards-one-map>
- Santos, F., Fletschner, D., Daconto, G. (2012) 'Enhancing Inclusiveness of Rwanda's Land Tenure Regularization Program: Initial Impacts of an Awareness Raising Pilot', Paper presented at the Annual World Bank Conference on Land and Poverty 2012. http://www.landandpoverty.com/agenda/pdfs/paper/santos_full_paper.pdf
- Tengnäs, B. et al (2010) 'Mapping and Review of Sida's Assistance to Land Policy Reform, Land Administration and Land Governance', Naturbrak AB. <http://bit.ly/Uy2Bw1>

Torhonen, M-K. and Palmer, D. (2004) 'Land Administration in Post Conflict Cambodia', Symposium on Land Administration in Post Conflict Areas April 29 - 30, 2004 Geneva.

http://www.fig.net/commission7/geneva_2004/papers/lapca_04_torhonen_palmer.pdf

Transparency International (TI) (2011) 'Corruption in the Land Sector', Working Paper No. 4.

<http://www.fao.org/docrep/014/am943e/am943e00.pdf>

Van der Molen, P. (2007) 'Some Measures to Improve Transparency in Land Administration'. Strategic Integration of Surveying Services, FIG Working Week 2007, Hong Kong SAR, China, 13-17 May 2007. http://www.fig.net/pub/fig2007/papers/ts_1a/ts01a_05_molen_1304.pdf

Van der Molen, P. and Tuladhar, A. (2007) 'Corruption Is Everywhere: Transparency and Land Administration', Geoinformatics: Knowledge for Surveying, Mapping and GIS Professionals, Online Articles. <http://www.geoinformatics.com/blog/online-articles/transparency-and-land-administration>

Warnest, M. and Hogarth, R. (2011) 'Land Sector Working Paper Appendix B', Smith School of Enterprise and the Environment/ University of Oxford. http://www.smithschool.ox.ac.uk/wp-content/uploads/2011/11/Land-SWP-final_proofed.pdf

World Bank (2003) 'Project Appraisal Document on a Proposed Credit in the Amount of SDR 15.1 million to the Republic of Ghana for a Land Administration Project', Report Number 25913.

http://www-wds.worldbank.org/servlet/WDSContentServer/WDSP/IB/2003/07/16/000090341_20030716103814/Rendered/PDF/259130GH0PAD.pdf

World Bank (2012) 'Land Administration Project -2', World Bank, Projects and Operations.

<http://www.worldbank.org/projects/P120636/land-administration-project-2?lang=en>

Zimmerman, W. (2006) 'Transparency and Land Administration', Presentation to Expert Group Meeting on Transparency in Land Administration A Capacity Building Agenda for Africa, UN-HABITAT/ITC Nairobi, Kenya, 29-31 January 2006.

Zimmerman, W. (2012) 'Building the Capacities for Effective Management of Government-Owned Land', FIG/FAO International Seminar State and Public Sector Land Management in Transitional Countries, Budapest, Hungary, 20-21 September 2012.

http://www.fig.net/commission7/Hungary_2012/2.2_paper_zimmermann.pdf

5. Additional Information

Key websites:

Land and Poverty Conference <http://www.landandpoverty.com>

International Federation of Surveyors: www.fig.net

UN-Habitat <http://www.unhabitat.org/categories.asp?catid=9>

Global Land Tenure Network

ITC (International Institute for Geo-Information Science and Earth Observation), University of Twente

<http://www.itc.nl/>

Experts consulted:

Gandhi Subedi, University of Reading

Willi Zimmerman, GIZ

Clarissa Augustinus, UN-Habitat

Melissa Permezel, UN-Habitat

Fitrian Ardiansyah, Australian National University

Jaap Zevenbergen, Delft University of Technology

Suggested citation:

Walton, O. (2013), *Land Transparency Programmes and Land Data Platforms* (GSDRC Helpdesk Research Report), Birmingham, UK: Governance and Social Development Resource Centre, University of Birmingham.

About Helpdesk research reports: This helpdesk report is based on 3 days of desk-based research. Helpdesk research reports are designed to provide a brief overview of the key issues, and a summary of some of the best literature available. Experts are contacted during the course of the research, and those able to provide input within the short time-frame are acknowledged.