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**Wisconsin Land Information Association**  
**Annual Conference**  
**Wisconsin Dells**  
**March 1-3, 2006**



*The views expressed in this paper are those of the authors, and do not necessarily represent those of the U.S. Agency for International Development nor of Emerging Markets Group nor of Terra Institute. Special thanks are due to those three organizations which have supported the Land Titling and Economic Restructuring in Afghanistan Project.*

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*Key Words: Land administration, cadastre, land/property registration, post-conflict, information and communication technology, preservation of deeds archive integrity, cost of land/property registration.*

*Summary: The introduction of information and communication technologies into land registration organizations in post-conflict conditions can be very useful, but also faces severe constraints. The experiences in Albania, Kosovo and Afghanistan are analyzed to show the potential benefits and costs, and the conditions under which ICT can be profitably adapted to the reconstruction of land administration organizations in post-conflict conditions.*

## **1. Background**

During serious conflicts which have been occurring around the world—Kosovo, Sudan, Afghanistan, Iraq--people are killed or disappear, buildings and physical infrastructure are destroyed, legal frameworks are set aside, public registers of property rights are destroyed, State government institutions get caught in cross-fires and cease to be effective, markets cease to function, properties are taken and lands occupied by people without the permission of their owners.

The healing process following such destructions is always complex. But in one way or another the repair has to be done, including the repair of the natural environment and of wounded people, but also the repair of basic social institutions, one of which is “land administration”. Land Administration (defined by the UN/ECE as the process of determining, recording and disseminating information about ownership, value and use of land<sup>2</sup>) includes processes of land registration, cadastre, taxation, and land use development and control.

The question which we want to explore in this paper, is how should Information and Communication Technologies (ICT) be contribute to the rebuilding of land administration agencies in post conflict situations? The question implies that the introduction of ICT can have positive impacts but that expected benefits may be constrained by the special conditions in post-conflict societies.

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<sup>1</sup> The information presented in this paper concerning Afghanistan comes from visits to that country by the author in early 2005, sponsored by a U.S. Agency for International Development funded project (Land Titling and Economic Restructuring in Afghanistan) administered by the company Emerging Markets Group, of Washington D.C. The views expressed in the paper are those of the author alone, and not those of USAID nor EMG.

<sup>2</sup> UN, Land Administration Guidelines, New York, Geneva 1996

The institutional factors affecting land administration in post conflict situations are much more complicated than in the relatively ordered world encountered by companies and agencies in the relatively stable US and European countries. Testing the hypothesis about the potential benefits of ICT in land administration agencies which operate in extreme conditions can help identify important contextual factors which may go undetected in “normal” conditions, and can give striking examples of how the re-engineering of land administration agencies can be assisted by ICT, but also how too big or too rapid investments in ICT can be counter-productive.

Countries in post-conflict situations put special demands on the repair and modernization of land administration institutions and operations:

- 1) People are uprooted from their homes, work places, businesses and farms. This uprooting especially affects people with training and experience in the use of information and communication technology (ICT) for land administration —meaning that technically trained people are in very short supply.



**Figure 1: An Abandoned Village Near Jalalabad, Afghanistan**

Even if they can be found, public land administration agencies cannot offer salaries attractive enough to agree to use their technical training.



**Figure 2: An Engineer Now Selling Kebabs in Kabul**

- 2) Infrastructure damaged—electricity untrustworthy and use of technology dependent on stable electrical energy is constrained.



**Figure 3: Infrastructure Conditions in Parts of Kabul**

- 3) The routine of customs and laws and the workings of the institutions of governance are fragmented and weakened by warlords, commanders, and criminals with money and weapons who operate outside of established routines.



**Figure 4: New and Old in Kabul**

- 4) Conflicts among factions does not cease on a specific date, making the concept of “post conflict” deceptive. Simmering tensions can and do erupt into conflict and violence periodically.



**Figure : A New Day for Flying Kites in Kabul**

## ***2. Rescuing Information from the Wreckage***

In all countries within a market oriented political/economy, even in those about to be wrecked by conflict, land administration agencies function somehow in gathering and using information about property boundaries and rights, land use, and land values.

Conflict typically results in the disorganization and destruction of records maintained by these agencies. The records held by individual families also may be lost by the destruction of war or through forced migration.

When the conflicts subside and people try to recover a certain sense of normality, the choice people face is whether to invest in a massive re-creation of the documentation needed for land administration, or to search through the rubble and recover what still exists from the past.

In Kosovo, some cadastral and court records were destroyed in the conflict; the retreating Serb Army also crated up other records and took them into Serbia. The UN administration was unable to retrieve these records from Serbia, although lawyers assisting with private land transactions have been able to get access to the absent records and document legally recognized transactions, recording them in the emerging Kosovo archives.



**Figure 4: Empty cadastral office in Kosovo**



**Figure 5: Missing Cadastral Maps in Kosovo**

In some Municipalities, older copies of the records were recovered, as were computer files in a few Municipalities. But even after a major effort at recovery of records, only 50% of the parcels had an acceptable correspondence between the actual possessor and the legal documents of possession<sup>3</sup>.



**Figure 6: Court Archives in Kosovo--1999**

### ***3. Document Rescue Experiences in Afghanistan—2004 and 2005***

In Afghanistan, the various rebellions and wars during the past three decades resulted in the destruction of many deed archives (eight of the 34 provincial archives were completely destroyed). In other archives, volumes of documents were scattered across floors, and in others there was lack of care resulting in insect and water damaging of documents.



**Figure 7: Deeds in Kabul--2003**

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<sup>3</sup>See David Stanfield, Scott Thomas, Kathrine Kelm, and Jeff Dorsey, “An Assessment of Property Rights in Kosovo”, report prepared by ARD, Inc., for USAID/Kosovo, March, 2004.

The temptation in such conditions is to start over, and conduct a massive title adjudication and property survey effort and re-create the archives. However, the after-effects of conflict include substantial instability due to lingering inter-militia violence, and a certain resistance to the “occupation” forces resulting in lack of physical security in many parts of the country.

Also, the resilience of land administration organizations and concepts is substantial. Land surveyors and judges are very often committed professionals. Surveyors and registrars have often performed heroically to save maps and documents from rampaging military units or enraged crowds. Such people and the record archives they administer, at least in Afghanistan, are amazingly resilient. The option of reconstituting the document archives and the administering court or cadastre makes a great deal of sense and is supported by significant parts of the country’s Judiciary<sup>4</sup>.

The Afghans have reason to respect their property records system overall logic, even though the documents have been mistreated in recent years. For example, the Afghans have established standard formatted deeds of sale, so that in any particular transaction all that the Judges have to do is write in the description of the property involved, the identification of the parties to the transactions, and the nature of the transaction. Figure shows the first page of a standardized deed. There is no reference to a survey plan or map, a weakness of the system, but the property is described by its location, the names of the neighboring property owners and the place in which the property is located.



Figure : Page 1 of Standardized Deed in Afghanistan

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<sup>4</sup> The recovery of property records has been strongly supported in Afghanistan by the Judicial Reform Commission, especially Dr. Zikria and Justice Baha, with the financial and technical support of USAID and teams organized by OTI-RONCO initially and then by Bearing Point and since November, 2004 by the LTERA Project under the direction of Emerging Markets Group in cooperation with Terra Institute.

The Afghans do pay particular attention to the identity of the buyers and sellers. Not only are the names written on the deed, but the finger prints of the parties, plus those of four witnesses are recorded, as are photographs of all parties and witnesses. Figure 2 shows the second page of the standardized deed with these details. Normally only two pages of information are needed to complete a legal deed. Note that women are parties to property transactions, and have rights to real property. Note also that they are required to be photographed, a constant source of tension for judges who ask photographs of traditionally veiled women family members.

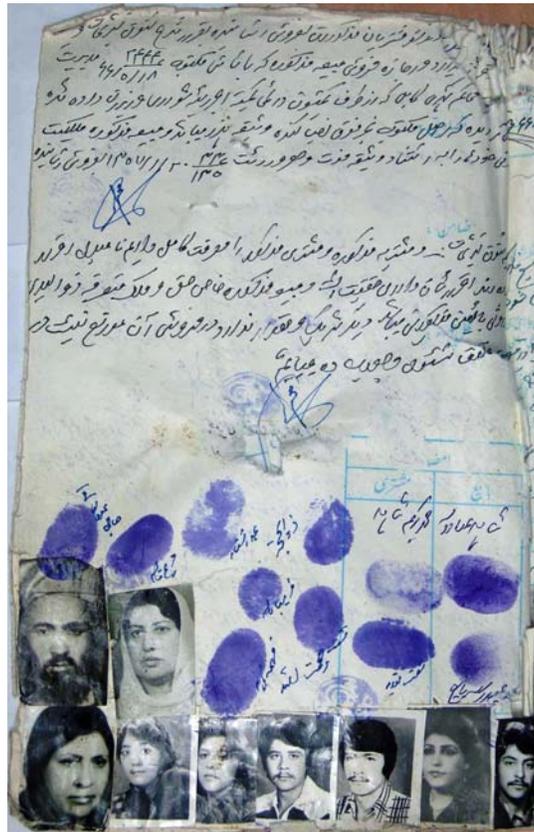


Figure : Page 2 of a Standardized Deed in Afghanistan

What is the role of ICT in this reorganization and recovery of property documents?

- 1) Task 1: Inventory of bound volumes of deeds and their re-archiving



**Figure 8: Deeds in New Cabinets in Kabul--2004**

The first step in the re-organization of the deeds was the simple purchase of metal cabinets, and placing the files on shelves in an organized way. Then came the inventorying of the archived documents. The inventorying of bound volumes could have been done manually. But, courts have never maintained even a paper based inventory of bound volumes. Doing the inventory digitally, on a computer, even if printed out periodically for courts to use, allows the checking for errors and correcting them, and for the identification of each volume and where physically it should be located (by cabinet number).

Result of the ICT intervention: A new process (inventory of bound volumes) has been established for the courts. Errors in identifying and locating volumes have been corrected. The archives of documents have a greater degree of security with the use of metal cabinets, and with the production of multiple copies of the digital inventory data base, which will facilitate recovery of archives in the future in instances of destruction or damage to the archives.

## 2) Task 2: Repair and digitally copy deeds

After the bound volumes are re-organized and inventoried, the creation of digital copies of the documents they contain has started. The scanning of deeds in the bound volumes was planned originally, but the decision now is to use digital camera to photograph each deed. Photographing does not disturb the documents as much as scanning, and can easily handle documents of varying sizes. The quality of the image for printing on a good quality printer is quite satisfactory. Before photographing, however, the team repairs torn documents with tape and glue, which in itself is a valuable part of the document rescuing process. Figure 9 shows a document photographing team at work.



**Figure 9: Preparing Deeds for Photographing—Kabul, 2005**

Positive impacts of ICT on document archiving:

- a) Each document is repaired before photographing.
- b) Digital copies of all deeds provides security in case of future disasters that deeds will not be lost.
- c) Courts can now access archives from the Court and do not need to send people to the archives, making copies and consultation of documents much easier and quicker.

Constraining factors.

- a) There may arise resistance from some court employees to the introduction of deed photographing and indexing, who have gotten substantial facilitation fees for finding deeds in the past. Some employees may also come to fear losing their jobs due to the new technology. No resistance has been detected yet, however, and the staff and Judges have been very supportive of efforts to date.



**Figure 10: Hand Copiers of Archived Deeds**

- b) Courts must have employees who can photograph and use computers to identify and store the images. But with wages officially at \$50-\$75 per month, the Courts will find it difficult to employ and keep people at such salary levels with the needed aptitudes and training.
- c) It may occur that some powerful people who may have engaged in fraudulent transactions may oppose modernization of Court processes, with or without ICT, which makes such modernization more difficult. Such opposition has not yet materialized, which is a positive commentary on the Afghan character, but experiences from other countries indicates that the danger exists.

#### ***4. ICT and Information Access in Afghanistan***

Each court in Afghanistan prepares a summary of all documents produced each day, including the grantor/grantee names, date, type of document, and unique document number. However, the courts have historically not used this log as an index to find deeds based on the names of the grantors or grantees.

ICT is being used to improve access to information contained in the deed archives. Having the deeds in digital form helps. But to find the needed deeds, after photographing, an indexing team enters basic information about each deed into a database. Future searches will use this digital index to find deeds according to names of grantors and grantees (sellers and buyers), date, deed number, and other characteristics of the property and transaction.

Process impacts of ICT used for improving access to deeds:

- a) Courts themselves will be able to do a chain of title verification using the digital index. They will not have to rely on ownership information maintained by Municipalities and District Land Offices. The index and digital archives will speed up chain of title searches and will eliminate steps now required to carry out a transaction.
- b) Courts can also use the index to produce statistics about the work that they do, the numbers and types of documents that they prepare each year.
- c) An important process impact of ICT is the modeling of the processes which ICT requires. The two main models which typically are created are:
  - the data model which is the more static model
  - the process model which uses the data model but which can evolve more rapidly than the data model

Modeling of organizational procedures and processes is usually more difficult than carrying them out. This is a challenge not only in post conflict countries, but also in more settled countries. ICT introduction, or the plan for its introduction, encourages the use of a more formal, mathematically based language to describe organizational processes. The advantages of having the system described in a more formal language are:

- the holes in the system can be more easily identified, so the system can be improved.
- The formal presentation helps in identifying un-needed or illogical procedures.
- it is easier to see what parts of the system are better to automate, and in what order of priority, and which are better left as manual.
- How the existing structure and procedures work is better documented and very easily transferred to other people who will work with the system in the future.

Constraints on ICT use in making access to documents more efficient:

- a) There is a limited number of programmers familiar with database design and maintenance, and skilled in creating and using client oriented software for managing complex data bases.
- b) Electricity supply is intermittent.

- c) Experience with computers and their ways is limited in the Courts, meaning that there will be a significant learning curve before such technology can be managed effectively.
- d) People may not accept the “new” ICT ideas as being as secure and predictable as the present procedures.
- e) Experiences in other countries has shown that there may arise opposition of some court staff and powerful people to changing system in ways which will limit their abilities to manipulate the records in their favor. Strong support for the project to date has forestalled such fears in Afghanistan.

## **5. Conclusions**

The hypothesis that ICT can interact positively with land administration organizations in post conflict situations has been at least partially supported by the preliminary evidence coming from the introduction of ICT into the processes of the courts which presently administer property records in Afghanistan. While the efforts are just beginning, there appear to be positive effects:

- The computerized inventorying of bound volumes of deeds as part of the recovery of document archives, has proven beneficial for the identification and correction of errors in the identification and location of the volumes.
- The digital photographing and computerized indexing of deeds will allow the use of digital images to do searches and copying, and thereby will reduce the time needed for such procedures as well as cost—hopefully.
- The use of digital images will reduce the need to handle fragile paper documents, and their further degradation.
- Risk of document loss should be dramatically reduced
- There should be greater difficulty in introducing fraudulent documents into the archives

The special constraints on ICT positively contributing to the reconstruction of land administration organizations in a post conflict situation have become painfully obvious from work being done in Afghanistan:

- Professionally trained people capable of developing, using and maintaining ICT are very scarce. Capacity building is a slow but absolutely vital process. At present the Department of Computer Science in the University of Kabul does not have sufficient teaching staff to produce the needed ICT technicians with adequate IT skills.
- Infrastructure is very slowly being repaired, meaning that electricity supply is limited in time, especially in the winter months or when draughts dry up the reservoirs. Electricity also is variable in quality when it is flowing in the wires. The generator response is expensive and difficult to maintain. Safe and reliable alternatives are needed, such as cheap but reliable solar panels and battery charging technologies for supporting computers and printers.

- The use of “facilitation fees” in land administration organizations has become an established bureaucratic fact, which can produce an opposition to ICT, or at least notable lethargy, in addition to the commonly found resistance from people who fear that they will lose their jobs. To get a higher degree of professionalism from a better paid staff, the process of recording changes in property rights which are now handled by the courts, may be better administered by a separate, self financing, executive agency. Such an arrangement would help professionalize the work done, and should provide salary flexibility to attract and hold competent staff.
- Institutional Issues:
  - a) The court defined procedures for carrying out transactions change from time to time, and from court to court. The fluidity of procedures makes the introduction of ICT on a massive scale quite problematic.
  - b) People who manage the present system may question the ability of the new ICT procedures to be as secure and predictable as the present manual procedures.
  - c) The cost of ICT and its introduction into land administration organizations under unstable conditions makes even the avid promoters of ICT cautious.
- Political Questions.

The overthrow of the Taliban regime in 2001 resulted in a foreign military and political presence in Afghanistan which faced a *de facto* partition of the territory of Afghanistan into areas under the influence of powerful warlords and militia commanders. The fragile government which was then created was interlaced with foreign advisors and Afghans who returned from abroad to take over the day-to-day administration of key ministries, but paid as foreign advisors. Foreign NGO’s including profit and non-profit organizations flooded into the country giving the impression of soaking up the foreign assistance resources provided by the United Nations and European and US governments.

This “foreign-ness” of the governance of Afghanistan was not a problem initially after the invasion of 2001, since the Taliban government had suffered a loss of public confidence in many sectors, although still respected by some religious groups. Plus, the international cooperators of the new government had promised to help rebuild the country after three disastrous decades of destruction, violence and insecurity.

In recent months, however, the situation seems to be changing. Foreign governments have pressured the Afghan government to undertake a poppy eradication campaign, unpopular with some rural communities. There is a government policy supported by the international community of weakening the arbitrary power of the commanders and warlords, some of which are also involved in the heroin business, causing some resentment among these groups of the foreign influence.

Politically, there is a perception among some Afghans that too much of the foreign funds and resources provided for Afghan reconstruction are going to finance

expensive foreign consultants and foreign NGO's. Meanwhile, while it is true that electricity service is somewhat improved, roads are in bad condition; the dusty atmosphere in Kabul is poisonous; schools are in poor shape physically and with very poorly paid teachers; the cost of housing is astronomically high; jobs are in very short supply, with many people waiting on street corners with the often vain hope of picking up a construction job; the generators of the foreign businesses and NGO's grind away 24 hours a day, while many local residences do not have power or water.

These irritations could escalate into more frequent abductions and robberies aimed at foreigners. Added to this cauldron is the potential for "hiving" of insurgents in Iraq looking for ways to attack the Americans and other foreigners in places like Afghanistan.

It would be a major catastrophe for Afghanistan to sink back into the isolationist morass and high levels of violence which it recently started to leave behind. But the tensions simmering in the country can threaten the viability of any national investment program, an important component of which is the reconstruction of land administration institutions, strongly dependent on foreign financial and technical support.

What to do? A prudent strategy seems to be:

- 1) improve the facilities and procedures of the courts and archive managers and staff with a plan to introduce ICT in the future,
- 2) introduce on a limited pilot basis of ICT into the reconstruction of land administration organizations such as the Afghan court managed deed registration activities, under present conditions.
- 3) disengage the foreigner specialists from detailed institutional development programs, and place the operational responsibilities of such work in the hands of competent and committed Afghans.

The strategy would be for Afghans with the temporary advice of specialists, to "re-engineer" the procedures and staffing of the court managed deed registration system based on known and proven technologies (usually paper and pen) but also introduce ICT into registration procedures in small but visible places, to demonstrate its usefulness and how to handle the constraints. Manual, paper based procedures would continue until gradually supplanted by ICT.

In summary, as an Afghan friend said: "In Afghanistan it would be very difficult to predict plans very precisely; we can only say, let's try and hope."<sup>5</sup>

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<sup>5</sup> M.Y. Safar, personal communication, 21 May, 2005.