

## **Canadian contributions to land management in Africa: The future is both there and here**

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### **Abstract:**

In December 2006, UNECA held a Symposium in Ethiopia on land management information systems. The Symposium was sponsored by the Canadian ePolicy Resource Centre and NRCan. The Office of the Surveyor General for Canada led the Canadian contingent to the Symposium and drafted 16 principles afterwards that formed the core of UNECA's discussion paper. The process revealed that, although cadastral reform and LMIS upgrades must be context specific, there is much common ground between Canada Lands and much of Africa.

### **Introduction:**

A group of land information managers met at a United Nations' Economic Commission for Africa (UNECA) Symposium in Addis Ababa, Ethiopia in December 2006 in order to address land management information systems (LMIS) in the knowledge economy. The managers came from state and national governments, from the private sector and from academia; over 20 African countries were represented. In addition, a Canadian delegation, led by the Surveyor General for Canada, and consisting of representatives from the federal government, the private sector and academia participated. A few experts from Europe and the United States also contributed.

The debate was wide-ranging and focused on demonstrating how various land management issues across Africa can benefit from membership in the knowledge economy, on examining the constraints that exist to ensuring full membership, and on exposing the opportunities for the public and private sector within Africa, with appropriate assistance from Canada. The purpose of the background issues paper (Methven, 2006) and the papers presented by the selected experts at the Symposium, and of the plenary, break-out and summary discussion, was to assist member States to develop their resources for collecting and disseminating spatial data. This meant consolidating many complex ideas into a concise and effective framework for implementation in African communities. The objective was to produce immediate results for Africans and to lay the foundation for the establishment of civil institutions.

What came out of the Symposium was a set of principles that formed the core of a summary publication. Although the publication – *Discussion and guiding principles for Africa* (UNECA, 2007) - was compiled by UNECA with financial support from the Canada Fund for Africa as administered by the Canada e-Policy Resources Centre (CePRC), the guiding principles were drafted by the Office of Surveyor General for Canada. The purpose of this paper is to explain the significance of LMIS to Africa, to set out the 16 guiding principles that we drafted, and to suggest linkages between the African and the Canada Lands experiences.

**Background:**

The challenge of LMIS reform in Africa is merely a sub-set of the challenge of land tenure reform (UN, 2003). This latter challenge – characterized as access to and use of land - is oft disguised as ethnic, racial, religious and political struggle. For instance, much of the Rwanda genocide has been traced to demand for land and resources (Diamond, 2005). Sometimes, colonialism is suspect, as when the Berlin-Congo Conference of 1884-1885, attended by 14 European countries, is blamed for having “fragmented 1,000 indigenous cultures, divided what was once united, and merged what had been separate” (Lemmens, 2008). To be sure, “in Africa ... borders mean something. They separate entire psychological mindsets” (Wills, 1996). However, such truisms mask the real issue: socio-economic development in Africa is primarily dependent on good governance. Good governance is central to the effective administration of a state’s resources, the rule of law, the creation of a functioning private sector and the development of a strong civil society (Ibrahim, 2008). LMIS is but a creature of good governance.

The challenge of LMIS is capacity – expertise, budgets, institutions, knowledge, models, and principles (Ezickbalike, 2000). There are three broad considerations which underlie an effective public-private-community based approach for managing land information in Africa. The first consideration is that land management policies and strategies are integral to allowing Africans to more efficiently and effectively manage their land, so as to address two pressing issues:

- Issue 1 – sustaining resources, particularly in the rural sector.
- Issue 2 - better managing the creation and expansion of informal settlements in the urban areas. These settlements account for a significant proportion of the African population, and are accompanied by insecure tenure, environmental degradation, lack of policing and the other services (such as water, and sewage), and the inability of local governments to reasonably tax the parcels. Indeed, the focus in 2008 will likely be on Africa’s cities and towns (Ledgard, 2008).

A second consideration is that digital information (that is, information produced by, stored on or transmitted by computers) is a necessary condition (albeit, perhaps not a sufficient condition) for better managing land information. Such enhanced management will allow Africa to fully invest (intellectually, structurally and financially) in the information society, meaning that such investment contributes to the knowledge economy.

A third consideration is that land management policies must be implemented in a rigorous fashion. That is, there must be rigour in the debate about what sort of system is appropriate for a particular setting, in the arguments used to request funding for both infrastructure and staff, in the assessment of the costs and benefits both pre- and post- implementation, in determining the respective roles of the public and private sector in Africa, in establishing the appropriate roles that the Canadian private and public sectors can play in assisting Africa, and so on.

## **16 guiding principles that arose from the Symposium:**

Addressing the challenge of LMIS reform requires the humility to recognize that the reform must be sensitive to context – social, legal, financial and environmental. The following principles reflect such sensitivity:

### **Principle 1:**

*There must be a common vision as to the outcomes along with well-defined objectives for the implementation of a Land Management Information System.*

Participants at all levels should participate in developing the vision and the expected outcomes from implementation of a LMIS. These should be accompanied by clear objectives that will allow measurement of progress against the key objectives that will produce the desired outcomes.

### **Principle 2:**

*Economic Commission for Africa (ECA), Canada and international cooperating partners (ICPs) should not attempt to impose a uniform, homogeneous, onsize- fits-all LMIS across Africa:*

All parties must recognize that such systems must be sensitive to local conditions and needs, and must build on systems already in place. The social, political, financial, legal and biophysical environment must dictate LMIS reforms. Given such a context, LMIS reforms should not be driven by technological determinism; that is, according to vendor promises or technical specifications. Nor should reforms ignore ethical considerations; simply because something can be done technically does not necessarily mean that it should be done.

### **Principle 3:**

*All LMIS reform led by ECA, Canada and ICPs must be rigorous:*

Reform must be informed by empirical analysis, whereby questions are asked or theories are posed, a methodology is devised, results are scrutinized, and the implications of the answers are examined. It is a difficult process. For instance, it is difficult to identify the benefits of a spatial data infrastructure (SDI) to the public and private sectors. It is also a necessary process.

### **Principle 4:**

*The knowledge economy is not synonymous with the e-economy:*

There is much valuable information about land that is held both orally and at a local level, as exemplified by the knowledge that chiefs have of resource use agreements. Although all communities should be encouraged and assisted in moving toward an e-economy, such encouragement must recognize that the knowledge economy is fundamentally based on access to information.

**Principle 5:**

*LMIS need not necessarily be computer-based:*

Where appropriate, particularly at the local level, paper-based systems might be more effective. Certainly, in those communities which have little technological infrastructure, it is much easier to search and file paper records.

**Principle 6:**

*Although the classical cadastre has merit, unorthodox approaches should also be considered:*

The cadastre typically consists of demarcating boundaries through surveying, calculating and drafting plans, and preparing transfer documents based on the plan descriptions. Unorthodox approaches might include non-survey-based sketches, picture evidence (still and video photos), and community-based boundary determination and dispute resolution mechanisms.

**Principle 7:**

*The knowledge economy must be based on a sound regulatory framework:*

The framework must include appropriate legislation and policies that address issues of governance and administration, data access and quality, the use of ancillary data, and the currency and status of information (such as aerial photography).

**Principle 8:**

*Information about land must be geo-referenced and descriptions of parcels must be unambiguous:*

Land administrators need accurate information about the location and shape of parcels. However, the accuracy should be a function of the use to which the land is to be put, and can be achieved using a range of techniques (high resolution satellite imagery, photo-mosaics, terrestrial photography, GPS, sketches based on pacing).

**Principle 9:**

*The value of information can be increased by making it widely accessible:*

The principle of free access to all data and information resources whose collection and maintenance is funded by the public must be promoted. The sharing of information helps local communities make decisions about the use of resources requires that administrators ensure that the data is both secure and correct, and creates opportunities for entrepreneurs.

**Principle 10:**

*Access must be weighed against local culture:*

It might well be that a community is particularly sensitive about the widespread dissemination of land information, in which case some access could be made conditional.

**Principle 11:**

*Accessibility is enhanced by having the surveyor generals administer the LMIS:*

Although the private sector has a key role to play in gathering information for input to the cadastre (such as through plans of subdivision) and of using information from the cadastre, public access is best assured if a state or national government is the sole custodian of the cadastre.

**Principle 12:**

*The private and public sectors should form partnerships:*

Such partnerships should also include universities and technical colleges, civil society, lawyers and notaries. The partnerships should set out areas of responsibility, revenue and cost-sharing models, data sharing and warehousing arrangements, and the value-added products and services to be offered.

**Principle 13:**

*Good and effective governance is essential:*

The organizations responsible for administering land information must ensure that the management is transparent, and that the information itself helps to promote good and effective governance by other groups. Such governance is encouraged by including a wide range of partners (across many sectors) and by including all levels. For instance information could be collected at a local level by members of the community, maintained at the state level, and then used by multiple beneficiaries to support numerous inter-related socio-economic objectives, including environmental sustainability and the eradication of poverty.

**Principle 14:**

*Land information management encourages and requires changes in institutional cultures:*

Computer-based systems require different management and work techniques than paper-based systems. Indeed, the transition is only brought about through visionary management, that will build the political will at senior levels of government and at the same time generate enthusiasm and recognition of the need for structural change at all levels, starting with the grassroots. Thus, moving towards a digital knowledge economy presents an opportunity to help re-design the institutional infrastructure of a country.

**Principle 15:**

*Indigenous and gender issues must be captured in any LMIS:*

Much land tenure in Africa is based on customary and religious systems, so any LIMS must adapt, and adapt to, such heritage. At the same time, land information management can and should empower women by recognizing the significant role that they play in the composition of the household, in gathering resources, and generally, in the knowledge economy. All sectors of society can and should benefit from better management of land information.

**Principle 16:**

*Public awareness is central to transparency and openness:*

The government is expected to employ decision-making processes that are open, as well as transparent, to stakeholders and the public. There is the need to enhance the sensitivity of various groups – government officials, professional bodies (surveyors and lawyers), and traditional leaders – to the benefits of better managing land information. Just as the LMIS should fit within the context of local culture, so too should the importance of LMIS be communicated using community metaphors, local examples, and customary icons. The level of expected risk and controversy, and the need for timely decisions, should guide the nature and extent of consultation undertaken.

**Post-Symposium:**

After the Symposium, the UNECA document *Land Management Information Systems in the Knowledge Economy: Discussion and Guiding Principles for Africa* (UNECA, 2007) included thirteen of the sixteen principles. Principles one through three were excluded. The reasoning for the omissions is perplexing. Perhaps it was felt that LMIS principles relating to common vision (principle 1), flexibility (principle 2), rigour and empiricism (principle 3) are merely conventional wisdom (Galbraith, 1958). Without delving into the *argumentum ad populum* fallacy too much, it should suffice to say that many LMIS have fallen into the trap of technological determinism (Chrisman, 2005), and that the call to rigour and empiricism is necessary for land tenure reform.

The UNECA document was structured to assist policy makers across Africa in developing their land management strategies so as to integrate information systems. Such strategies will assist Africa to benefit more fully from the knowledge economy. It is informed by the premise that such land management strategies require advice from various sectors – science and technology, social science, economics and law. The document also meshes well with various other initiatives, which are aimed at allowing Africans to manage land information better, at developing the capacity of the various institutions in Africa that deal with land information (government, civil society and the private sector), and at allowing Canada to assist such African institutions through the United Nations Millennium Development Goals, the New Partnership for African Development (NEPAD), and the NRCan Earth Sciences Strategy for Africa.

**Insights for Canada:**

The Canada Centre for Cadastral Management (3CM) was honoured to be able to participate in the UNECA Symposium, to transmit some Canadian lessons and experiences to inform the LMIS debate in Africa, and to draft the guiding principles. 3CM is well placed to proffer such advice for it contains much boundary, surveying, mapping, and land tenure expertise – all of which are the components of LMIS. It also has no agenda when it advises lands managers in Africa, for it is not driven by the profit motive. Moreover, 3CM recognizes the rich interplay between Canadian and African law and policies pertaining to land tenure issues, aboriginal title

and the creation of First Nations land registries (Ballantyne, 2006). This interplay is reflected by the similarities in devolution, self-government and autonomy between African institutions and such Canadian institutions as the First Nation Land Management programme.

Indeed, many of the LMIS issues confronted on Canada Lands are also confronted on African lands. In terms of socio-economic development, there is much in common between Africa and many First Nations in Canada. Although the Millennium Development Goals and the call for good governance are focused on many countries in Africa, the principles resonate in many First Nations. Similarly, issues of capacity (attracting, training and retaining staff) are common between much of Africa and many First Nations communities.

However, let us remember that there is much LMIS expertise in Africa. This expertise was represented at the UNECA symposium and elsewhere, such as at the 2007 meeting in Burkina Faso of the Global Environment Facility Strategic Investment Programme for Sustainable Land Management in Sub-Saharan Africa. The latter was also attended by the Surveyor General for Canada. To the extent that 3CM has a role to play in LMIS on Indian Reserves and in the north, by virtue of such lands being Canada Lands, then we might well facilitate African land managers transmitting some of their LMIS lessons to Canada.

Certainly, 3CM recognizes the three critical facets of LMIS. First, LMIS is a necessary condition for socio-economic development, both in Africa and on Canada Lands. Second, LMIS cannot be technology-driven; it must incorporate low technology approaches. Third, LMIS is not merely 21<sup>st</sup> century colonialism; nothing is to be foisted and anything suggested must be sensitive to local knowledge and needs.

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### **Biographies:**

Peter Sullivan is the Surveyor General of Canada Lands, Director of the Canada Centre for Cadastral Management (3CM) and Commissioner of the Canadian Section of the International Boundary Commission. He has led many projects during his 20 years with Natural Resources Canada and his 11 years in the private sector, including co-supervising a GIS feasibility study for Bangkok. He holds Alberta and Canada Lands Surveying Commissions and an Executive MBA.

Dr. Brian Ballantyne is a lawyer who serves as the Advisor to the Surveyor General and the International Boundary Commissioner, within 3CM. He has degrees in land surveying, geography, environmental ethics and law; has published, lectured and consulted widely; and has expertise in boundaries.