

Computer-Based Land Information Systems: A Tool for Effective Land Administration in Ghana

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Mr. Chairman,
Honourable Ministers of State,
Distinguished Guests, Fellow Colleagues,
Members of the Press
Ladies and Gentlemen.

We speak today on a very technical subject and therefore crave your indulgence if a little time is spent in giving certain initial definitions as a background to this presentation; and providing also a contextual framework in order to bring some understanding to bear on the subject. We will also try to operate within the framework of the nascent Land Administration Project (LAP) which, it is believed, we are now very conversant with.

Mr Chairman, we all know that the land sector of Ghana has been bedevilled with many problems, one of which is a weak land administration system. Our land market presents formidable challenges to the land administrator, the planner, the surveyor, the sociologist, the environmentalist and the economist, especially in an environment where base data is scanty. The lack of adequate functional and coordinated Land Information System (LIS) and networks underpins this weak system, requiring that land sector agencies maintain up-to-date scientific data, maps and plans, geographic databases and digital information systems.

Mr Chairman, a Land Information System (LIS) is a medium for acquiring, processing, storing and distributing information about land. It is designed to provide a service, concentrating on individual or corporate land parcels and the way such information is effectively managed using, as the name implies, computer technology. We do not want to go into detail on what a Geographic Information System (GIS) is, except to state here that LIS and GIS may be perceived as the same tool 'in terms of analytical functions and other operations performed on the data', making LIS, indeed, 'a special case of GIS'. We are, however, constrained to differentiate between 'information' and 'data' so that the august audience will be in no doubt as to what they mean in the context of this lecture.

Data is a recording of facts or instructions on a storage medium for processing, retrieval, communication and for presentation as information. Site plans are data but when we are able to evaluate or interpret them to solve a problem or make decisions by asking questions on them, then they become information to us. A good land administration system must provide relevant and useful information to the public after data has been properly processed.

It is acclaimed the world over, Mr. Chairman, that Land Administration is the process whereby land and information about the ownership and value of land may be effectively managed. A robust land administration system will therefore include provision of information on land in an effective and efficient way, correctly identifying those people who have interest in real estate and providing information about these interests (such as the nature and duration of rights in land) in a timely manner.

As distinct from 'land administration', 'land management' is a process of managing the use and development of land in a sustainable way from both an environmental and economic perspective. A 'cadastre', a type of land information system that incorporates a set of records about property rights, or taxation of land, or the recording of land use may indeed be a land management tool, using a parcel-based LIS, and therefore ultimately making it a subset of the LIS.

Having given this background, Mr. Chairman, we now devote the next part of the lecture to stating the problems confronting the land sector and show the need to use LIS as an appropriate tool in land administration.

Mr. Chairman, it is needless to say that, at the heart of Ghana's land administration system are problems relating to information provision and how data is being handled. The following facts attest to this observation:

- major sources of information, such as land use maps and layouts normally prepared by the Town and Country Planning Department (TCPD) are usually outdated and in paper form;
- the linking of such information sources to provide graphical representations for land administration and for decision-making is carried out manually in the Lands Commission (LC), not only making information retrieval difficult but also burdening it with errors and sometimes dubious manipulations by some officers;
- The Land Valuation Board (LVB) has not been able to produce a land-value database that is well structured for utilisation and therefore there is little coherent market information about land values;
- The Office of the Administrator of Stools (OASL) is yet to fully computerise its operations to take advantage of the many accounting software now available for managing stool lands accounts that will help in the proper management and disbursement of revenues to stools;
- The Survey Department (SD) has not been fully assisted to develop a well-sustained and functional LIS, requiring all thematic databases held by the land sector agencies to be referenced to it, nor has it been able to maintain a geo-spatial framework for the land agencies as envisaged under the 1999 National Lands Policy (NLP);
- the Land Title Registry (LTR) has not been able to maintain up-to-date maps (in digital format) and reliable records of lands and interests in land in designated areas under PNDCL 152; and very seriously, Mr Chairman,
- staff of almost all these agencies have little or no prior computer skills and lack sufficient knowledge of the use of LIS as a generic tool, suggesting that training has been low and unplanned strategically in this regard.

Mr Chairman, you will agree that the list is not exhaustive and is mostly technical in nature. Serious institutional bottlenecks also exist, making land delivery in terms of allocation for investment purposes slow, constituting a disincentive to investment in the country at certain times. These include:

- excess workers at the lower level of staff but with a related acute shortage of experienced and well-trained professional staff with Information Technology (IT) background;
- poor remuneration and conditions of service;
- perceived corruption; and
- an inimical land policy environment sometimes involving the meddling in the affairs of some of these agencies, particularly in the appointment and removals of Executive Secretaries of the LC etc. etc.

What is the significance of all this? Mr Chairman, the understanding of these institutional characteristics, some of which have been well catalogued in the NLP and the Project Appraisal Document (PAD) of the LAP, helps in placing the application of LIS in the proper organisational context, implying that its successful adoption will depend on how well computer-based LIS implementation strategies are formulated to tackle such organisational barriers.

In fact it is widely accepted that organisational rather than technological issues are most likely to endanger the effective implementation of computer-based LIS in Africa and elsewhere. With the coming into operation of the LAP, where all the land sector agencies are expected to be merged, a critical institutional reformation of the agencies will engender the use of this tool. We are aware that Professor Donald Grant has submitted his final report on institutional reform in this regard. The adoption of this report may prove critical in the use and application of LIS to improve our services delivery in the land sector agencies.

There are in fact many reasons underpinning the Government's enthusiasm for the launching of the LAP. Paramount among them are; the growing outcry for better land management in the country, security, certainty of title and access to land information.

Mr. Chairman, let us say that it is not the manual systems *per se* that are the causes of the problems (although they have contributed significantly); it is the fact that there are costs, delays and uncertainties in the land administration system in this country. Details of flow lines of information are seldom documented or monitored. We believe, Mr Chairman that on the basis of better management of information, substantial improvement within the lands sector can be brought about by analysing and costing existing procedures, abandoning unnecessary practices and making better use of existing resources through computerisation.

The use of a computer-based LIS will force managers to re-examine their current procedures and thereby improve on delivery. It will, indeed permit better monitoring of the organisation's performance, providing information on what is happening on the land in a better way so that problem areas can be identified and resources needed for them assessed and relocated.

Mr Chairman, Ladies and Gentlemen, what then are the issues? A good land administration system will firstly *guarantee ownership and security of tenure* and the use of a computer-based LIS will protect one from inaccurate or incomplete information either contained in the deeds registry or in the public records. Even though there may be no guarantee of ownership *per se*, the integrity of the system will be sufficiently high for land owners and investors to have full confidence in their rights.

Secondly, a good land administration system will *protect state lands records* and the use and application of a computer-based LIS helps to manage property assets, ensuring its robust use and upkeep.

Thirdly, a good land administration system will *develop and monitor land markets efficiently* and an LIS will provide information on current land prices, thus allowing better estimates of the market value of land to be made. Mr Chairman, our profession must venture into using this tool for property market analysis, involving also the determination of the impact of transport infrastructure on residential and commercial property.

We were pleasantly surprised when, at a meeting of the GP Divisional Committee, our attention was drawn to the fact that in the United Kingdom and elsewhere, LIS/GIS are being applied to property valuation and management in an increasing measure. It would appear, Mr Chairman that we must begin to recognise the powerful tool which LIS/GIS offer for effective property management in our profession.

Fourthly, a good land administration system will *improve urban planning and infrastructure development* and a computer-based LIS will permit the integration of records of land ownership, land values and land use with sociological, economic and environmental data in support of physical planning. The overlay of these themes will allow spatial analysis of any kind for decision-making. Herein lies the prowess of LIS as a generic tool.

In short a computer-based LIS 'will force standardisation in the collection and processing of land data, decrease the cost and space required for storing land records, prevent unnecessary duplication, facilitate access to land-related data and improve their distribution, reduce the time and cost involved in transferring property rights and in processing mortgages, facilitate the monitoring and analysis of market and rental values of land and property and provide built-in mechanisms for quality control'.

Mr Chairman, the list of goodies is endless but let us, at this juncture, make a point of caution! And in doing so, permit us to quote P. Zwart in order to place this lecture in a proper context or perspective. Zwart in an article – 'Land Information Management without Computers' stated in 1999 that:

"The time to decide as to whether to use computer-based [LIS] is when [the requisite] organisation and management reforms are in place. They need not, and in most cases should not go hand in hand as the common wisdom seems to suggest. In the meanwhile, by reforming your existing land information system before introducing the computer, you will have taken the major step to secure their success. You will also have minimised the risks and gained most benefits"

We could not agree with him more since the actual issue is not merely about using computers but improving the overall information management of lands irrespective of the medium used to store data. The issue is not just about computers or technology; it is also about how the use of LIS will thrive within the proper institutional setting of land sector agencies. When the use of technology occurs within the right institutional framework or organisational milieu, taking cognisance of the culture of agencies, then will we minimise the risk and gain the most benefits.

The use and application of LIS poses some challenges though. We are confronted, Mr Chairman, with the critical issue of data maintenance and the creation of a cost-effective way of keeping land data up-to-date. This problem will occur when the land sector agencies start converting existing land records into digital form. Another problem will be found in the area of data processing as our cadastral and land registration systems have focussed on records management rather than information exploitation. Another crucial area is data integration. We appear not to have fully accepted the concept of information as a corporate resource. How to effectively ensure data sharing or exchange is a problem and with the apparent dormancy of the National Framework of Geo-spatial Information Management (NAFGIM), located at the Environmental Protection Agency, the future of data interoperability, integration and sharing appears bleak. NAFGIM was set up in November 1997 to serve as the framework for the development of geographically referenced databases in Ghana. It was also to promote

standardized geographic data protocols and database formats to support national development and to provide consistent and harmonized framework for the exchange of geo-referenced data.

Yet another critical issue, Mr Chairman, is the availability of adequate funds or strong and continued management support to ensure the sustained use of this tool that is in fact a 'western artefact'. However, a recent study by one of our colleagues suggests strongly that the use of this tool, if tailored to the institutional needs of the agency involved, would result in net savings and thereby make that specific land agency solvent.

Mr Chairman let us end by making the following recommendations.

1. We must recognise that appropriate staff with the requisite training is *sine qua non* in the successful implementation of LIS and every effort should be made for well-planned training programmes tailored to suit all implementing agencies under the LAP.
2. Such members of staff have to be well motivated through incentives and good remuneration under appropriate conditions of service.
3. We must also recognise that cultural change in land agencies is needed if LIS is to be successfully diffused. In this regard the land agencies would have to be re-engineered as being suggested by Professor Donald Grant in his report.
4. We must also accelerate the use of private companies in supplementing the role of the Survey Department in managing the production and distribution of 'base' data layers for use by the other agencies.
5. The National Framework for Geo-spatial Information Management (NAFGIM) must be rejuvenated and made a truly national spatial data infrastructure and clearing house in Ghana so that a uniform approach for the maximum integration and security of data, sustainable resource utilisation and the development of a comprehensive LIS can be achieved nationwide.
6. We also wish to urge the many land-related NGOs to serve as vehicles of support in transferring IT and LIS to the District Assemblies and to the local levels, more especially as LAP envisages the strengthening of customary land secretariats in Ghana.
7. And lastly Mr. Chairman, it is our wish that development partners the world over continue to shift focus from funding single projects or single institutions and place emphasis to supporting long-term programmes (such as the LAP) as a framework and basis for ensuring institutional coordination in the use of IT and LIS in the land sector agencies in Ghana. The professional bodies' (i.e. the GhIS, the GIP, the GBA) inclusion in LAP's activities is therefore very much welcomed and we only hope that once the new Training Policy being drafted for LAP is complete we will be selected for LIS/GIS courses both internally and externally.

In conclusion Mr. Chairman, we must accept that the diffusion and application of LIS is a strategic issue involving a partnership of the Government, the private sector (including NGOs), the custodians of land and academia; and that failure to appreciate this will inhibit its successful diffusion and application in the country. We, as professionals, also need to undergo training in the use of this tool through our continuous professional development system. We foresee a major transformation of our profession should all of us get trained in IT and LIS/GIS and not leave this to the up-and-coming youth alone. A word to the wise, they say, is enough.

Thank you very much and God richly bless us all.

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