

# **Standards and Quality Assurance; a need for The Land Surveyor in Implementing the Land Administration Project (Lap) of Ghana**

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**Key words:** Standards and quality assurance, professional practice, mission statement

## **SUMMARY**

The land administration systems of Ghana are undergoing transformation to bring it abreast with international norms and standards in sustainable land management principles. Since October 2003, the land administration project (LAP) has been ongoing and the need to adopt standards and quality assurance by the Licensed Surveyors, who form the bulk of the private sector practice, cannot be over emphasized. The need to observe professional standards and quality assurance in every of aspect his service delivery is a challenge to the land surveyor as issues of standards and quality assurances becomes very dynamic with technology change.

For the country to benefit from the huge input of infrastructure and capital into the land services sector, issues of professional standards, production standards and products standards ought to form the bedrock of the surveyor. His tools and his products must be reliable and do have standards which are inter-related. This paper, therefore reviews the existing standards and quality assurance matters of the survey practice though regulated by law, but seems to be missing. It will attempt to review some of the recommended practices in other jurisdictions in order to determine how the vision and mission statement of the survey department (The National Mapping Organisation) of Ghana could be attained.

# Standards and Quality Assurance; a need for The Land Surveyor in Implementing the Land Administration Project (Lap) of Ghana

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## 1. INTRODUCTION

The survey Department of Ghana is the National agency responsible for survey and mapping of all lands of the Republic. Their mandate includes but not limited to the following, which is carried out by both Official Surveyors in their public duty capacity, and private Licensed Land Surveyors

- Provide Topographical Maps at medium and small scales.
- Provide large scale maps of cities and towns for land titling and physical planning.
- Provide GIS and Remote Sensing Applications services
- Provide Thematic Maps.
- Provide Cadastral and Engineering Surveys.
- Provide Hydrographic Surveys.
- Demarcate Stool Lands and International Boundaries.
- License and supervise licensed surveyors jobs.
- Provide composite plans for land dispute resolution at the courts.
- Precise Leveling and Mean Sea Level Observations.
- Provide administrative and accounting support services.
- Advise Government on all survey and mapping matters.
- Generate Revenue.
- Assist Traditional Land Owners to demarcate and survey boundaries of their land.
- Train Middle level Surveyors for the department, other land sector agencies and other public institutions.
- Provide Framework Survey

The realisation of the above stated mandate relies solely on both public and private sector land surveyors with the latter being licensed and regulated by both the professional bodies Act and the survey Act, 1962 Act 127. in line with good governance practices, citizen's charter have been set out by state institutions who provide services to the public. The mission statement therefore of the Survey Department is *"To provide accurate and reliable geographic information services and standards through efficient utilization of appropriate technology for the exploitation and exploration of the natural resources of the land to alleviate poverty and support the socio-economic development of Ghana in an expeditious and cost effective manner"*. ([www.ghanalap.gov.gh](http://www.ghanalap.gov.gh) )

This paper is to focus on the extent to which, in achieving the mission statement of the survey department, the licensed land surveyors' professional contribution could help if well positioned.

## 2. CONTRIBUTION OF STANDARDS

The German Institute of Standardisation (DIN) refers to Standardization is a strategic instrument for economic success. When involved in standards work, businesses can gain a competitive lead through timely access to information and knowledge. They can use this to their own advantage, reducing the risks and costs involved in R & D as well as greatly reducing transaction costs.

They stated that Standards generated economic benefits which are estimated at 16 billion euros a year for Germany alone. Standards promote worldwide trade, and is a technical lingua franca for businesses throughout the world by encouraging rationalization, quality assurance and environmental protection, They also say Standards have a greater effect on economic growth than patents or licences.

### 2.1 Standards in Ghana

It is important to distinguish between standards in professional practice, standards in service delivery and standards in products. Within the Ghanaian context, the Professional Associations have their standards and bye-laws which are sometimes regulated by national laws or Constitutions of the various Associations. There is also the Ghana Standards Board (GSB), which is the National Statutory Body responsible for the management of the nation's Quality Infrastructure involving Metrology, Standards, Testing, Quality Management and Conformity Assessment including Certification. The GSB is therefore the *National Standards Body* and by law also a *Conformity Assessment Body*; ensuring that specified requirements relating to a product, process, system, person or body are fulfilled.

As the National Standards Body, GSB is responsible for developing and publishing Ghana Standards in line with International Standards for all products including foods, drugs, cosmetics etc, management systems and for services.

Again, GSB is responsible for coordinating standardization and all related activities within Ghana. ([www.ghanastandards.org](http://www.ghanastandards.org))

The lack of legal backing on survey standards is one of the major setbacks on checking survey standards in Ghana. Another setbacks is the lack of GPS baselines permanent reference station to check various systems used in Ghana. The GPS unit used in Ghana are normally not calibrated before use, thereby limiting the quality test used to evaluate the precision of the GPS equipment.

It is very important at this juncture to define some of the terminologies applicable to standards the world over. The ISO/IEC Guide 2: 1996 is the reference document adopted by the Ghana Standards Board. The following definitions apply as under;

**Standard:** *“Document that provides, for common and repeated use, rules, guidelines or characteristics for products or related processes and production methods, **with which compliance is not mandated.** It*

may also include or deal exclusively with terminology, symbols, packaging, marking or labeling requirements as they apply to a product, process or production method”..

**Technical Regulations:** “Document which lays down product characteristics or their related processes and production methods, including the applicable administrative provisions, with which compliance is mandatory”.

**Conformity Assessment: (Conformance)** “Any procedure used, directly or indirectly, to determine that relevant requirements in technical regulations or standards are fulfilled (eg..Inspection Testing, Certification)”

**Certification:** “Procedure by which a third party gives written assurance that a product, process or service conforms to specific requirements”.

**Registration:** “Procedure by which a body indicates relevant characteristics of a product, process or service or particulars of a body or person in an appropriately available list”.

### 2.1.1 The Land Surveyor in Context

In dealing with the above definitions, we should take into account what pertains in the life cycle of the land surveyor in Ghana, we would want to identify the tools of the surveyor, (these being equipments, hardware and software), the processes of the service delivery, (professional practice) and finally the product of his services (plans, maps, charts, data) to determine if quality issues are necessary.

The National Mapping organisation and the Private Surveyors have less manpower to tackle the numerous survey deliveries in the country. It is approximated to (1) Surveyor to 100,000 citizens of Ghana and this clearly shows that the volume of work to be done in the country require a lot of facilities which have influence on the use of equipment hence standards.

### 2.1.2 Survey Equipments

Surveying equipments and materials, which one can consider as the surveyor’s tools are manufactured by foreign Companies (OEM)’s who subscribe to voluntary standardization regimes such as the ISO. Each manufacturer publishes its own standards after testing and many are published in technical literature for reference. They are also available as additional information in product manuals. Such information on standards provides choices for one to determine standards and accuracy requirements for the final output. It also provides additional opportunities in making choices in terms of brands financial planning and budgeting.

The name “interoperability” is assuming prominence in data capture systems as well as information management systems. Each manufacturer in any of this category is now making sure that his products are not “caged” but are open enough to, and adaptable in other systems. For this reason, making choices of hardware, software and other infrastructure for data capture and data management has become less difficult for the surveyor.

At the moment the Ghanaian surveyor is incapacitated in taking full advantage of the opportunities listed above because of the absence of a vibrant retail market for surveying hardware and software systems. Furthermore, laws and regulations that provide standards for

survey data capture and survey data output have become old as a review of the 1962 Survey Act by the LI 1444 did not differ significantly in form and or substance.

### 2.1.3 Professional Practice

The systems of ensuring standard in professional practice of the land surveyor in Ghana are in the following forms; (1) The survey law and regulation referred to supra, (2) the Constitution and bye-laws of the Ghana Institution of Surveyors and (3) Constitution of the Licensed Surveyors Association of Ghana. Whilst the first is an Act of parliament in which power is vested in the Director of Survey through the Minister responsible for lands; the rest basically have no legal enforcements and can best be described as laws of “moral suasion”.

Under the Ghanaian survey law, the Director of Survey shall prepare Technical Instructions for the survey of lands and mapping of the country. These technical instructions are to be adhered to by every practicing surveyor. However the existing technical instructions have certainly outlived its usefulness as they do not address the contemporary issues of modern day land surveying and mapping.

The situation is even worse and alarming when one considers the rapid change in every facet of the survey practice. The difficulty would always be how to allow quality assurance and standards to function within the process and products of surveyors in Ghana. Sometimes the situation is ameliorated by a procurement entity’s insertion of quality and standards required of the service or product in the procurement document. This however, is certainly not the best because the data or end product may not be usable by other institutions which require similar data thus defeating the noble concept of interoperability for the creation of a seamless national spatial data infrastructure.

### 2.1.4 Services and Products

The services of the surveyor in Ghana is not different from those of many jurisdictions in other parts of the world. Maps and plans being one his products serve significantly in the existing land conveyancing system. In reference to mission statement of the survey department however, one can see a department from that noble statement in terms of accuracy and reliability of most maps and plans prepared by the surveyor. Many have become questionable in the face of constant reports of inaccurate or badly prepared plans submitted to both government institutions who record the transactions in land and the public who use these plans for other purposes.

Some of the reasons ascribed to this problem is the lack of standardization facilities for testing equipments, difficulty on the part of the clients to assess quality and completeness of maps and plans, lack of ethical will on the part of some professional surveyors, lack of will on the part of professional association and the state institution to discipline offenders because of peer protection and others. Coming from this regime, I have had cause to quote extensively from the American Lnad Title Association to emphasise the need for the Ghanaian land surveyor to adopt some of the best world practices.

In the United States of America (USA) for instance, it is recognized that members of the American Land Title Association (ALTA) have specific needs, peculiar to title insurance matters, which require particular information for acceptance by title insurance companies when said companies are asked to insure title to land without exception as to the many matters which might be discoverable from survey and inspection and not be evidenced by the public records.

In the general interest of the public, the surveying profession, title insurers and abstracters, ALTA and the National Society of Professional Surveyors, Inc. (NSPS) jointly promulgated and set forth such details and criteria for standards. It recognized and understood that local and state standards or standards of care, which surveyors in those respective jurisdictions are bound by, may augment, or even require variations to the standards outlined herein. Where conflicts between the standards outlined herein and any jurisdictional statutes or regulations occur, the more restrictive requirement shall apply. It is also recognized that title insurance companies are entitled to rely on the survey furnished to them to be of an appropriate professional quality, both as to completeness and as to accuracy. It is equally recognized that for the performance of a survey, the surveyor will be provided with appropriate data which can be relied upon in the preparation of the survey. (See [www.acsm.net/ALTA2005](http://www.acsm.net/ALTA2005))

### 3. THE CHALLENGES FOR THE LAND SURVEYOR

The International Federation of Surveyors (FIG) through its commission 1 sets out to identify how surveyors could get actively involved in standards. Looking through its reports, standardisation activities are on the agenda, it identifies **14,941** ISO standards in print at the end of **2004**, amounting to **531,324** pages with some of the current works on standards such as: The current standard set includes:

- ISO 17123-3 - Optics and optical instruments – field procedures for testing geodetic and survey instruments - theodolites
- ISO 19111 - Geographic information - spatial referencing by coordinates

The FIG recognises how in the field of surveying, many of the disciplines within the profession have not to date been subject to *de jure* standards. Some have existed for land survey instruments but these have not been widely used. In the valuation field, national standards have long existed. For the suppliers and users of geographic information, however, standards in the series ISO 191xx are being developed by ISO Technical Committee (TC) 211 and a series of them have already been published. ([www.fig.net](http://www.fig.net))

In Ghana, we can identify the lack of standards as a basic problem which ought to be looked at if the reformation of the land administration system is to survive. If the FIG with its immense resources and partners realise how difficult standards are created, then serious efforts should be made to collaborate with jurisdictions that have come to grips with the realities on the ground.

### **3.1 Multiple Institutional Structures in Ghana**

The capture of geographic data sets, management and utilization of spatial data amongst and between all the land sector agencies has become very desirable in view of the fact that, the need for geographic data sets for planning, titling, business, tourism, infrastructural development, health and environmental management has become critical in every nation's development.

The main institutions responsible for land administration in Ghana include customary Authorities (comprising a chief or head of family and his principal elders), and public sector institutions such as the Lands Commission, Land Valuation Board, Land Title Registry, Office of the Administrator of Stool Lands, Survey Department, Town and Country Planning Department and the District Assemblies. Each of these agencies operates under its own legal mandate, some having been set up by the Constitution. Whilst the customary institutions operate mainly under customary law, the other agencies, being public sector agencies, operate mainly under statute. (Larbi, 2006). The capture, storage and sharing of geographic data has posed many problem between and amongst these institutions in the past. What we have to do immediately is to reverse that trend.

### **3.2 Capacity Building and Training**

Under the Ghana Land Administration Project, a major re-alignment of both Institutions and resources are being undertaken. It is expected that changes will take into account the dynamics of the technology, material and human resources available at any point in time. Because much of the support in funding are obtained by foreign assistance, the ease to go beyond a particularly boundary to shop for efficient product and services are constrained by protocols or specific condition of engagement.

Training and capacity building, I am sure will be one of the best options for developing the human capital available in this profession. The bulk of the private sector surveying is at the doorstep of a group of land surveyors who in my estimation are poorly equipped to come along with most of the contemporary issues geographic data capture and management. Before any capacity building process is established, it is my fervent desire that standard are critically examined.

## **4. CONCLUSION**

We agree with the assertion by the Director of the land administration project that the project is a bolder initiative at tackling the hydra headed problem associated with land administration in Ghana (Larbi, 2006). Worse is the absence of standards in the daily routine of the land surveyor who is playing a critical role in the affairs of the project.

In order not to fall back to where we took off from, we have to determine issues of standards as one of the key areas which can significantly affect the realization of the mission statement

of the land surveyor and his mother institution, the Survey Department in propelling the nation forward. The useful lessons to learn here is that, for the land surveyors to be properly involved in LAP:

- We should establish standards in human capacity development
- Standards in general management and client relationships
- Standards in processes and procedure of geo data administration
- Spearhead the immediate reform of the provision in existing legislation that concerns standards.
- The project (LAP) must immediately consider the setting up of a technical committee on standards along side those being carried out by FIG.

## REFERENCES

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## BIOGRAPHICAL NOTES

**Kwame Tenadu Snr.**, is a Licensed Surveyor and Managing Director of Geo-zenith limited in Ghana. He is currently the President of the Licensed Surveyors Association of Ghana and the Central Regional Chair of the Ghana Institution of Surveyors after having served on its Council as Member for five years. He has consulted extensively on many projects in Ghana and is a past Chairman of the Central Region Lands Commission. He recently attended a workshop of land professional in gendering land tools by GLTN and UN-HABITAT in Bagamoyo, Tanzania.

**Stephen Djaba** is a Licensed Surveyor and Director of Geo-Tech Systems Limited in Ghana. He is an expert in Geographical Positioning Systems and serves as a consultant to a number of firms undertaking GPS related Surveys, Cadastral and Land Administration in Ghana. His in-depth knowledge in survey is an asset in the efficient execution of all aspects of engineering surveys. Mr. Djaba serves as a resource person for seminars and workshops focused on imparting knowledge on modern trends in Survey and Mapping. Over the years, he has developed an integrated approach to the execution of his assignments right from fieldwork through data processing to production of design drawings using Computer Assisted Design Systems.

He is currently the International Coordinator of the Licensed Surveyors Association of Ghana (LISAG), and Commission 5 Chair of the Ghana Institution of Surveyors. He has also served as Chair of FIG Commission 1 working Group 3 for years. He has attended most FIG members since 1994 and was the FIG 5<sup>th</sup> Regional Conference Coordinator held in Accra, Ghana.

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