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**Phased Approach to the Development of a Land Information System  
by Ministry of Lands and Valuation in Malawi**

**PHASED APPROACH TO THE DEVELOPMENT OF A LAND INFORMATION SYSTEM  
BY MINISTRY OF LANDS AND VALUATION IN MALAWI.**

**ABSTRACT**

The paper looks at efforts being taken by the Ministry of Lands and Valuation in Malawi towards developing a Land Information System which would not only act as the basis for all future land related projects, but will provide the basic data for the review of the National Land Policy currently being undertaken by Government.

**INTRODUCTION.**

The Ministry of Lands and Valuation is responsible for the legal registration of land and keeping and maintaining the related records among other things.

The present database holds details regarding all rural and urban land leased by government to facilitate collection of ground rent. A recent consultancy which among, other things, looked at the integrity of the database found it incomplete in many aspects and proposed that it be cleaned and updated.

**FINDINGS OF THE CONSULTANCY.**

The consultancy exposed a number of problems and weaknesses in the Lands database such as:

- Incompleteness: Many leases were not registered probably due to the weakness in the registration system.
- Freehold Titles: Titles under freehold status were not entered in the database, since as indicated earlier on, the database mainly saves to track down payment of ground rent.
- Location: Details of position of leased properties were not included making spatial analysis impossible. Only postal addresses with no references to known streets were used.
- Outdated and unreliable Equipment : The database resided in outdated equipment. A 286 PC and UNISYS PC. This resulted in frequent breakdowns and problem of maintenance.

## PHASED APPROACH TO THE IMPROVEMENT OF THE DATABASE

The following were suggested as a more realistic approach to improve the lands database:

- Update the hardware and software to current standards taking into consideration: ease of use, memory capacity, operating systems, software Compatibility etc.
- Recreate and reenter the database from the original applications and registry files.
- Inclusion in the database of freehold land and land under title registration.
- Inclusion of Grid Reference of one of the corner points of land parcels to allow for ~~spatial analysis of density~~ and spatial analysis of density and distribution of land parcels.
- Decentralising the database to the three Regional Lands Offices in the country while keeping the 'master' copy at the Ministry Headquarters.

## GETTING STARTED:

To clean and update the database the Ministry has embarked on the extraction from original application and registry files and entering the following attribute data:

- Name and address of owner of the land parcel.
- Title deed number.
- Deed plan number.
- District.
- File number.
- Type of usage e.g. residential.
- Size or area.
- Type of tenure.
- Originating deed for cases of freehold titles.
- Term of tenure including commencing date and review term.
- Registration status.
- Ground rent and review term and date.
- Grid reference of one of the corner points.

Field completion and site survey verification is to follow where discrepancies exist to verify location and boundaries.

## USE OF G.I.S.

Once the database is finally created it will have large volumes of data and will require routine database updates such as adding new data and deleting old ones.

Effective analysis of this database would require effective techniques of storage, analysis and reporting. One of the strengths of G.I.S is its capacity to carry out spatial analysis, and view the results. A G.I.S would therefore offer marked advantages in respect of query and analysis in addition to data maintenance.

It is therefore proposed that this database be input to a G.I.S such as Mapinfo which is compatible with DBASE.

But before this can be done the spatial component of the database will have to be considered by ensuring that land units that are related to attribute data are prepared in digital form.

Property transfers, Valuation rent reviews, covenant compliance etc. can thus be monitored quite easily and retrieval of information for daily operations made much easier.

The question now is whether the ministry should digitise its own maps or utilise digital data from the Surveyor General's Office taking into that integrating databases from different data sources is a difficult task.

## SOME MAJOR PROBLEMS:

### UNRELIABLE SURVEYS:

Most of the surveys used for leases outside urban centres are magnetic compass surveys performed by unqualified surveyors. The surveys are inconsistent and more often than not misallocated. Although these surveys could be digitised the resulting digital data could be unreliable. The problem would be eased through use of GPS (if affordable) to field check a number of doubtful surveys.

### TRAINING:

Most of the senior officers in the Ministry of Lands and Valuation got their education and training before the development of the Computer Technology of (LIS, GIS). There is therefore need for them to be introduced to this concept so that they are able to exploit and appreciate the opportunities offered. Unfortunately these are the decision makers who are supposed to use the information but who may not be technically proficient with the concept.

There is also lack of qualified operators as most computer packages are too comprehensive and not very user friendly.

## HARDWARE AND SOFTWARE

Costs of acquiring these are still very high and unaffordable to most government departments.

## FINAL REMARKS:

The need For Land Information increases as the society develops. The Land Information System when fully developed will be a very important resource to many organisations. There are a lot more areas that have to be looked at critically and investigated more: System Security, System Compatibility with other systems in the country, etc. Concerted action will therefore be needed to come up with a workable Land Information System to improve National Planning and decision making.