

The General Valuation Law and the CAMAS in the Lands and Surveys Department in Cyprus

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Key words: General Valuation, Mass Appraisal, Computer Aided Valuations

SUMMARY

The General Valuation in Cyprus has a very significant role to play in our economic environment because it forms the basis by which all property taxes are charged. The General Valuation is considered as a very important land management tool, because it is the means of raising income both for the central and local governments. In addition, the implementation of general valuations every year can support fiscal decisions at a higher level as well as bringing more transparency and minimizing externalities in the property market. Other benefits that can be gained from regular valuations, is the ability to monitor the mortgage market and to be proactive and when needed to take precautionary actions, where the financial and property sector appear to be unsustainable. Similarly, by monitoring the property cycles through the property prices, we can better understand the property market and how the market can be more sustainable over a longer period of time.

The aim of this paper is to outline the main principles of the general valuation law in Cyprus and further to describe the current computer mass appraisal system in the Lands and Surveys Department. In conclusion, the benefits to the society of carrying out general valuations on a regular basis are also outlined.

Specifically, the presentation is divided into three basic sections which are described below:

- Outline the major provisions of General Valuation Law in Cyprus. These include the actual legal process of carrying out a general valuation as well as the citizens' rights when a new general valuation is to be decided.
- Outline the major components of the CAMAS in the Valuation Section of the Lands and Surveys Department.
- In the last part, the benefits to the society for carrying out General Valuation regularly are outlined.

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1. INTRODUCTION

Geography: Cyprus is situated in the northeastern corner of the Mediterranean basin at the crossroad of Europe, Asia and Africa. It lies at a distance of 800 km from mainland Greece to the west, 96 km west of Syria and 65 km south of Turkey. With an area of 9.251 sq. km, Cyprus is the third largest Mediterranean island after Sicily and Sardinia. It has a maximum length of 240 kms from east to west and a maximum width of 100 kms from north to south. A geographical map of Cyprus, is shown in Fig. 1)

Fig. 1



Cyprus' population at the end of 1995 was 735.000. Population distribution by ethnic group is 84,7% Greek Cypriots, 12,3% Turkish Cypriots, and 3% foreigners residing in Cyprus. The Capital of the island is Nicosia and its major towns are Limassol, Larnaca, Paphos, Famagusta, Kyrenia and Morphou.

The Cyprus Tragedy: On July 15, 1974 a coup was staged in Cyprus by the Greek military Junta, then in power, for the overflow of President Makarios and Turkey used this pretext to launch an invasion on July 20, with a full-fledged army against defenceless Cyprus. Eventually, the Turkish Troops occupied the 37% of the territory of Cyprus, since 1974. Two hundred thousands Greek Cypriots, 40% of the total Greek Cypriot population, were forced to leave their homes in the occupied area and were turned into refugees. 1619 Greek Cypriots are missing since 1974. Thousands of Cypriots, many of them civilians, were killed, raped and maimed during the invasion. Turkey continues to occupy part of Cyprus in utter disregard of repeated UN resolutions, and maintains an occupation army of 35.000 soldiers, colonizing the occupied part of Cyprus with 80.000 settlers from Anatolia. Despite a humanitarian agreement (known as the Vienna III Agreement) reached in 1975 that would

have allowed 20,000 Greek Cypriots and Maronites to stay and live a normal life in the occupied Karpasia Peninsula and the Maronite villages, less than 500 enclaved Greek Cypriots and 160 Maronites remain in the occupied area today. This is the result of a systematic campaign of harassment and intimidation and continuing massive violations of their most basic rights and freedoms, including those guaranteed by Turkey in the Vienna III Agreement. In addition, since the invasion there is a systematic destruction and alteration of the historic and cultural character of the part of Cyprus under Turkish occupation. An administrative map of Cyprus, is shown in Fig 2.

Fig. 2



Modern Times: Nicosia the capital of Cyprus is the only divided city in Europe. The Republic of Cyprus is a member of European Union as from May 1, 2004 and has entered the eurozone as from January 1st of 2008. Some economic indicators are shown below:

Cyprus in Figures:

Economic Indicators	2008	2009	2010
Real GDP Growth	3,6%	-1,7%	-0,4%
Inflation	4,7%	0,3%	2,4%?
Unemployment %	3,6%	5,3%	7,4%
Budget Deficit (% GDP)	1%	6,1%	5,7%
Public Debt (% GDP)	48,3%	58,0%	61,9%
Current account deficit (%GDP)	-11%	-8,%	-9%
Income from Tourism	-3,5%	-16,7%	3,8%
Tourist Arrivals	2.403.744	2.141.187	2.172.993

* Eurostat, Cyprus Central Bank, Statistics Dept.

2. INTRODUCTION OF GENERAL VALUATION

General valuation is performed on a regular basis in most countries in the world, because is used as the basis for property taxation, at central or and at local government organizations or authorities.

The valuation for taxation purposes is usually covering whole geographical areas, towns or communal authorities and the only feasible way to implement this in terms of reasonable cost, time and quality, is by doing it in mass. The term mass appraisal is a long established terminology, or general valuation which means doing an appraisal in mass rather than single or one by one. This is only possible to be carried out using Computer Mass Appraisal Systems (CAMAS), which are very popular all over the world.

There are various basis of assessment in a general valuation, according to the system of every country, the most important being the following:

- the Annual Rental Value
- the Site Value
- the Capital Value

The **annual net rental value** is a system of taxation established in U.K and this covers only non domestic rates, which are properties other than residential. In other words, in UK the basis of the system is different between residential and non residential properties. The residential properties are under the domestic rates or so called council tax and the basis of taxation is the market value of the property. Similar system is also applied in Netherlands, where residential and non residential properties are separated.

The **site value** taxation can be found in Australia and New Zealand and that is to ignore any additional value attributable to the existence of the building structures. The main purpose of property taxation on land only, is to encourage development by bringing into the market unutilized or undeveloped land. On the other hand, this system has been criticized because it may also produce inequalities, injustice and discrimination among properties

The **capital value basis**, as its name suggests, is the value of land and all buildings or structures or other properties standing on the plot. In Cyprus, the property taxation system, is based on the Capital Value of properties, which is the market value of the property at a specific point in time. The same principle applies in the United States of America as well as in many other countries. It is believed that this kind of system is offering a just and equitable basis of taxation and can also be used to serve a number of other purposes in the national economy, both at micro and macro level environment.

3. THE HISTORY OF GENERAL VALUATION

The first coherent General Valuation in Cyprus dates back to 1920, when the first legislation was introduced under the Immovable Property (Registration and Valuation) Law, No. 12/1907. This law was introduced in order to carry out compulsory registration and valuation

of all properties on the island for the purpose of imposing property tax as well as to raise revenue through transfer fees. The General Registration on the island has been completed in 1929 and it has followed the Cadastral Survey. As regard the survey work, a new triangulation network was adopted in order to improve the existing survey work on the island as well as to have a sound survey boundaries for all properties on the island. In 1914, the Chain Survey Method was adopted with a relative accuracy, however the whole project was time consuming and therefore in 1918 the Graphical Plane Table Method was introduced, which was based on trigonometric points around the island, at a distance of a mile between them. This method was only applied in the countryside, while in the main residential areas, the Chain Survey Method was the one applied.

After the completion of the new cadastral survey work on the island, each property was registered with its own owner in a record known as the property register. At the same time, the valuation of each property was carried out and the valuation was recorded on every registration of title. The General Valuation was completed 20 years after it started in 1909. After the General Valuation, a record was produced, known as N.115, which included the registration of the property, its extent, its value and the property owner and its share.

The outcome of the aforementioned project has produced four cadastral records as follows:

- a) The Land Register, with full details of the legal and other survey information as well as the type of property.
- b) The Tax Register, in which all properties were recorded per owner, per geographical area, with its total value of all properties owned for taxation purposes.
- c) The Valuer's Schedule, known as the N.115 record, with the description of each property per geographical area, sheet, Plan, the extent, the locality, the owner as well as the value of each property.
- d) A Cadastral Plan for the whole of the island

4. MILESTONE IN THE CYPRUS CADASTRAL SYSTEM – THE NEW IMMOVABLE PROPERTY LAW PASSED ON 01.09.1946

The major driving force that has led to the introduction of the aforementioned law was that the previous system of land tenure failed to adapt or realign with the socioeconomic and cultural developments of the island over the years, especially after the transformation of the Cyprus economy from a pure agricultural to a more industrialized and service oriented economy. The problem was composite and it caused three major problems, namely:

- multiple ownership (different owners for land and trees)
- co ownership in shares (system of inheritance –all children inheriting a share in the parents' estate
- and fragmentation (this was the most serious defect of the tenure system due to

irrational subdivisions, lack of access, bad shapes)

The aforementioned new revolutionary legislation together with the Wills and Succession Law, were the major legal instruments that have been introduced in an attempt to resolve the so called defective "land tenure system". In an attempt to introduce the aforementioned law, namely, the **Immovable Property (Tenure, Registration and Valuation) Law, Cap. 224**, special provisions were also enacted as regard General Valuations. The major provisions as regard the General Valuations are described in detail in the next Chapter.

5. THE LEGAL BASIS OF GENERAL VALUATION IN CYPRUS

The Immovable Property (Tenure, Registration and Valuation) Law, Cap. 224, provides for the carrying out of General Valuations or Revaluations under Sections 66 to 74 of Part VII and lays down the legal provisions on the procedure to be followed. These provisions are explained in detail, in the following paragraphs:

5.1 Valuation of Immovable Property Not Previously Valued {S.66}

It provides that any immovable property not valued before coming into operation of this law and any property coming into existence after the date of the operation of this law, maybe valued, either at the instance of the Director or on the application of the registered owner.

Provided that until the property is valued and the value is registered, the Director may of the imposition of taxation and Lands Office Fees and Charges, determine a provisional value and enter the same in the books of the Lands Office, provided that the value shall comply as far as possible, with the value situated in the same, neighbouring or similar area, even though, for this purpose, the value to be determined shall not comply with the definition of word "value", under Section 2 of this Law.

Under Section 2 of this law, "**value**" means

"the amount which the immovable property, if sold in the open market by a willing seller to a willing purchaser, might be expected to realize"

Provided further, that the Director may proceed to revise the provisional value, where this is necessary, but without prejudice to any taxation or fees and charges imposed on the provisional value originally determined.

5.2 Revaluation {S. 67}

This section provides that any property valued at any time, whether before or after the operation of this law, may be revalued at any time being not less than 5 years from the date of the last general valuation, either at the instance of the Director or on the application of the registered owner.

Provided that, any property may be revalued at a time less than 5 years from the last valuation if –

- since the last general valuation, the property has been materially reconstructed or on any land there have been erected any buildings or planted any trees or vines so as to increase substantially the value of such property or land or
- since the last general valuation any property which has been destroyed or damaged to such extent as to affect substantially its value; or
- a general valuation under section 69 of this law has been ordered

5.3 Valuers {S.68}

Every valuation or revaluation of a property under this law shall be made by a valuer or valuers appointed in that behalf by the Council of Ministers. Every person appointed as a valuer, shall before performing any duties of his office, take an oath before a member of the Court, in the form set out in the Second Schedule to this law.

5.4 General Valuation of Immovable Property {S. 69}

Where the Council of Ministers is satisfied that, for the purposes of securing up-to-date and uniform valuation of the properties in any town, village or quarter, a general valuation in respect of all or any specific part of such property is necessary, the Council of Ministers may order a general valuation of such property {S.69(1)}

For the purpose of this Section, "general valuation" means a valuation of the properties mentioned in the above section, irrespective of whether any valuation or revaluation was previously made or not and irrespective of the date at which any such valuation or revaluation was made {S.69(2)}.

The property is valued with vacant possession {S.69(3)}.

A general valuation carried out under the provisions of this law, is not applicable for the purpose of this law or any other law, unless a special provision is made in that law.

5.5 Procedure on General Valuations {S. 70}

When a general valuation has been ordered, the following provisions apply:

- (a) the Director publishes in the Official Gazette of the Republic and in other newspapers as he may deem necessary and also post up a notice, informing the public that a general valuation will be made, giving particulars of the area in respect of which the notice is given and the date on which it shall commence and calling on

all owners to supply the valuer with such information, or with a return in writing containing such particulars, touching upon the property to be valued, as the valuer may require and to produce for inspection any documents in their possession or under their control.

- (b) When the valuation has been made, the Director deposits the lists with the chairman of the Communal Authority and causes it to be published in the official gazette of the Republic and to be posted up a notice to the effect that the lists have been deposited;
- (c) Any person interested in any property to which the notices relate, may inspect the lists at all reasonable times and is allowed to make any extract therefrom or take any copy free of charge.
- (d) The valuation made shall be final, unless the person affected objects in writing to the Director within 60 days from the date of posting up of the notice as in paragraph (b), or unless the Director applies to the Court for the revision of the same as in para. (f).
- (e) The Director considers every objection under para. (d) and gives notice of his decision to the person affected.
- (f) When the Director applies to the Court for the revision of a valuation, as in para. (d), he proceeds to do so with all reasonable speed and gives notice of his application to the person affected.

5.6 Procedure on Valuation or Revaluation of Particular Properties {S.71}

Where valuation or revaluation is proposed to be made the following provisions have effect:

- a) The Director may give notice of the proposed valuation or revaluation to the persons affected calling upon them to supply the valuer with any information needed.
- b) When the valuation or revaluation has been made, the Director gives notice to the persons affected that this is final and conclusive, unless the person affected objects in writing to the Director within 30 days from the date of his giving such notice, or unless the Director applies to the Court for the revision as in para. (d).
- c) The Director considers any objection under para. (b) and gives notice of his decision to the person affected
- d) When the Director applies to the Court for the revision of a valuation or revaluation as in para. (b), he shall proceed to do so with all reasonable speed and he shall give notice of his application to the persons affected.

5.7 Valuation or Revaluation of Property held in Undivided Shares {S.72}

Where a property is held in undivided shares the following provisions apply:

- a) On valuation or revaluation, the property is valued or revalued as a whole, no regard being paid to the fact that such property is held in undivided shares and the value of any share be an amount bearing to the value of the whole property such ratio as that share bears to the whole
- b) The whole property may be valued or revalued, in accordance with the provisions of section 66 and 67 of this law, respectively, on the application of any one or more of the registered co-owner
- c) The objection to a valuation or revaluation of this property referred to in sections 70 and 71, of this law, respectively, may be made by any one or more of the co owners.
- d) Where on valuation or revaluation of the whole property an objection made by any of the co owners to the Director is sustained or an appeal from the Director's decision made by any of the co owners to the Court is allowed, the valuation or revaluation shall be varied by the Director or the Court, respectively, in respect of the whole property.

5.8 Valuations to be effective until revised {S.73}

Any valuation or revaluation made by a valuer is binding and effective for all purposes and is valid until revised by the Director and the decision of the Director and similarly by the Court. Any excess tax or fee paid on the basis of such valuation or revaluation before the same had been revised, should be refunded.

Until a general valuation of all properties in the area of any town, village or quarter is made under the provisions of this law, there shall be adopted and registered or recorded in the books of the District Lands Office as the assessed value of any property in such area, hereafter valued or revalued under the provisions of 66 and 67 of this law, respectively, such percentage of the value, thereof as the Council of Ministers may prescribe for properties in such area.

5.9 Deposits by persons objecting to valuation or revaluation {S.74}

Any person who objects to any valuation or revaluation made by a valuer or to any decision thereon by the Director shall together with his objection, lodge with the Director a fee of 17 euro as an administrative cost.

6. OTHER LEGAL CONSIDERATIONS

In order to secure an up-to-date and uniform valuation as provided by Section 69, it may be necessary to make certain assumptions such as each property is valued on a vacant possession basis and that any leasehold interests or any tenancies, contractual or statutory shall be ignored. The same principle applies in the UK rating system.

According to legal advice given from the Attorney General of the Republic, the following

legal principles should be followed as regard genral valuations:

- a) Equal treatment of the taxpayer by the government and fixing of the tax paying ability on the basis of objective criteria.
- b) For general valuation purposes, the valuation must cover the whole island
- c) For specific purposes, the valuation must cover the whole area which is specifically affected.
- d) A valuation for specific purposes cannot be used for general purposes.

7. THE LATEST GENERAL VALUATION IN CYPRUS

The latest general valuation for the whole island (free government area) dates back to 1.1.1980, after an Order was issued by the Council of Ministers in the Gazette of the Republic, by a Public Instrument Number 2/1982. The Department has completed the aforementioned project in a period of 12 years. The valuation date of all properties was based on 1980 values, covering the whole island and until today it forms the basis for all property taxes on the island.

Unfortunately, due to the invasion of Turkey in 1974 and its continues occupation for 37 years of the 34% of the territory of the island, it has caused tremendous economic distortions, one of those being the inability to have a uniform general valuation for the whole of the island. Further, distortions in the property values have been experienced both in the government control area as well as in the occupied part of the island because of the forceful movement of about 200.000 Greek Cypriot refugees in the controlled government area.

The general valuation has been carried out manually with no assistance of any computerized mass appraisal system. In terms of human resource engagement, about 50 employees have worked to accomplish this task and the whole project was scheduled on an overtime basis.

The approach to general valuation was straight forward. All market information was collected from various sources, examined, analyzed and the findings were classified into groups to cover the whole of the area under valuation. In other words, the whole process was standardized with an element of repetition. In the analysis stage, the valuers adopted, what is known as “spot” or “pilot values” for every geographical area and type of property. Also some mathematical equations were also developed as part of the standardized methodology.

The latest general valuation in Cyprus on 1980 values and the inability to carry an updated general valuation for the island has created a number of externalities which are described below:

- a) The current system is described as anachronistic
- b) It is unfair, because it promotes inequalities between people and this gap is increasing over the years as a new general valuation is not decided to be performed on current prices
- c) The system is old dated and obsolete, because is not consistent and is not realigned

with best practices and good land governance of almost all developed countries and those of the European Union.

- d) The system is ineffective in a sense that the government could have received multiple benefits and could have raised substantially its revenue, by deciding to carry out a new general valuation of the island.

8. THE CAMAS IN THE LANDS AND SURVEYS DEPARTMENT

As described in the previous chapters, in Cyprus the two general valuations have been performed on 1920 and on 1980 values and have been carried out manually, an approach which on today's capabilities and modern technology, is considered time consuming and cost ineffective and highly cost to administer.

8.1 Brief Historical Background of the Cyprus Integrated Land Information System

It was becoming increasingly recognized at international level in the 1980s that governments should proceed without any further delay to develop or improve their land administration systems, especially after the revolution in information systems. Instant access, maintenance, enquiring to land records and other related information was becoming critical in order to effectively administer and manage the nation's land resource and to promote social and economic sustainability to the society.

A study has been sponsored by the Commonwealth Fund for Technical Cooperation and reported a degradation of land record systems in Cyprus. The system could have been ideal to meet the needs of the past but it was impossible to meet the needs and demands of the future generations. A report was produced namely the "Sedunary Report", recommending two major objectives, the first being the improvement of manually oriented and outdated land registration procedures and the second to develop a fully integrated land information system. The implementation of this project was based on a strategic plan prepared by the SAGRIC International, on behalf of the Cyprus government, dated December 1989. This strategic plan has set a time horizon of about 10 years to implement the project. An Organizational Review Study was also prepared by SAGRIC International and this was submitted to the Department in September 1991.

The implementation of the strategic plan was initiated by publishing international tendering, the assignment of the project to a Consortium (CSC DataCentralen and ESRI). The development of the CILIS was initiated in September 1995 and was handed over to the government in 1999.

Today, the integrated land information system comprises of three major components, namely the legal, the fiscal and the GIS. The legal component covers the business processes of registration, transfer, mortgage, inheritance, encumbrances, easements, covenants, leases etc. The fiscal component includes the Computer Assisted Special Valuation System (CASVS), the Computer Assisted Mass Appraisal System (CAMAS), the Computer Assisted Valuation Audit System (CAVAS) and the Real Property Enquiry System (RPES). The valuation

system in its present form, can perform in addition to the mass appraisals, special valuations which are compulsory acquisitions, requisitions, rental valuations, advisory and internal valuations for the Department. Lastly, the GIS components covers the Survey DB, the Digital Cadastral DB and the topographical DB, which constitute the spatial component, while the legal and fiscal DB the aspatial one. All the components are fully integrated between them and today the department has emerged into a dynamic multipurpose and multifunctional organization having under in one umbrella all the aforementioned functions and business processes.

8.2 The components of the Computer Mass Appraisal System

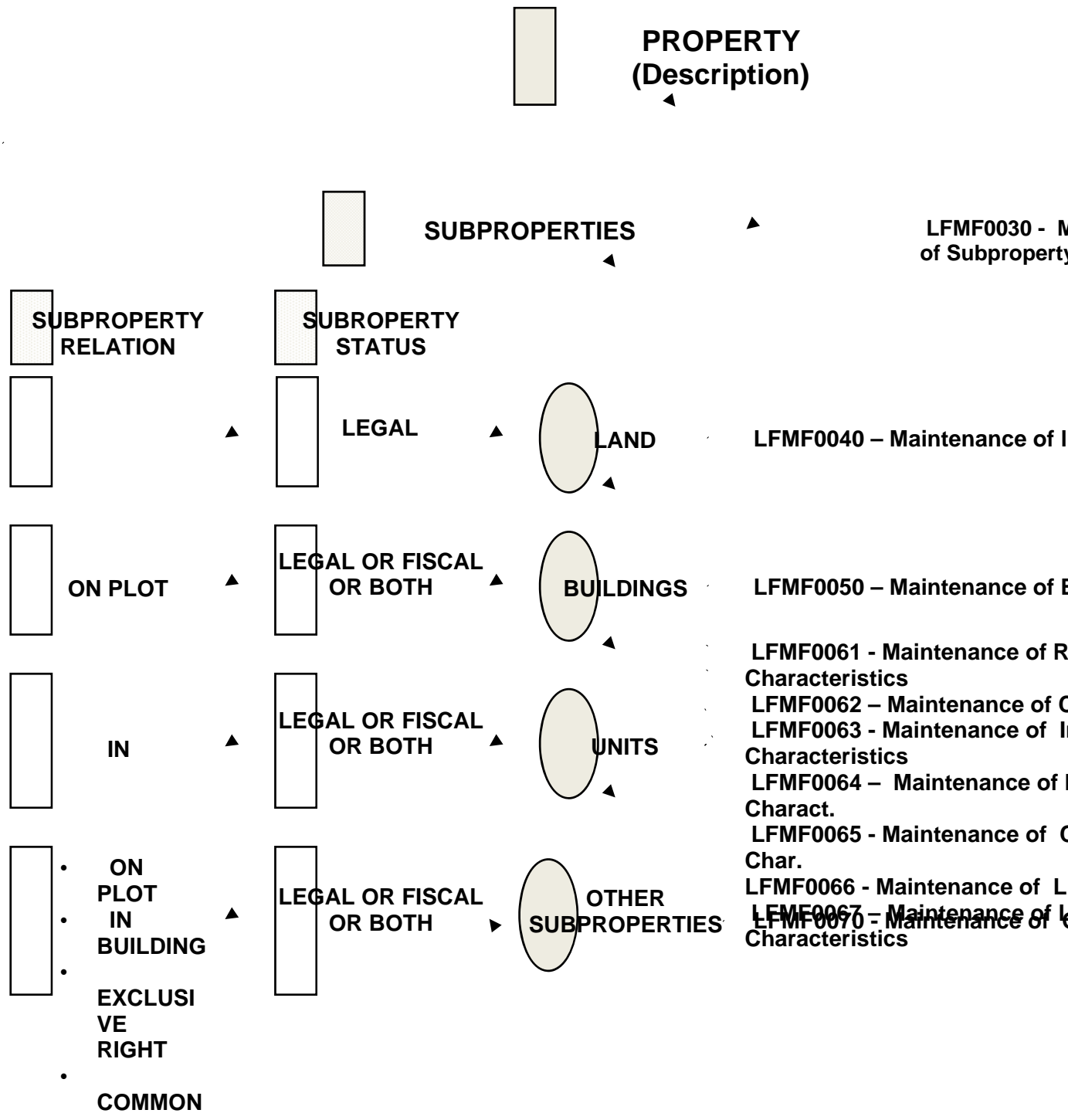
8.2.1 Property identifier

Every property on the island has a unique identification through an internal id into the system, however the end user can only visualize the external id. The property identification details are described below:

Registration Number	District	Town/Village	Quarter	Block	Reg. No.			
Geographical Area	District	Town/Village	Quarter					
Street Address								
Property Type								
Old Parcel Map Ref	District	Town/Village	Quarter	Sheet	Plan	Block	Plot No.	Map scale
New Parcel Map Ref.	District	Town/Village	Quarter	Block	Plot No.			
Coordinates	XYZ							

8.2.2 Property File

One of the most important components in any CAMAS is the need to have a property file. The Cyprus fiscal system is built based on international experience and practice and every property registration on the island has its independent electronic property file. Within this file, the system provides for the creation of property type description that relates to the physical description of the property, which is commonly consistent with the land use planning, but sometimes there are exemptions to the case. To overcome the difference, an additional field is available namely “Actual Land Use”. In addition, within the property file, it is possible to input all property characteristics for a specific property for any kind of property (Parcel, building, Unit, Other Subproperty). The system is built to accommodate any kind of property and this is actually divided into four main categories and this is presented in the following diagram:



For every kind of unit described above, there is a separate maintenance form that the property characteristics can be maintained and saved for the purpose of mass appraisal. The residential unit file is presented below:

ΣΥΝΤΗΡΗΣΗ ΧΑΡΑΚΤΗΡΙΣΤΙΚΩΝ ΟΙΚΙΣΤΙΚΗΣ ΜΟΝΑΔΑΣ

Φάκελλος Διόρθωση Πρόχειρη Περιοχή Βοήθεια

LFMF0081 DEVGIOBGALT
18-NOV-1998 leg014

ΧΑΡΑΚΤΗΡΙΣΤΙΚΑ ΜΟΝΑΔΑΣ

<p>Δομικές Λεπτομέρειες</p> <p>Είδος Σκελετού <input type="text"/></p> <p>Είδος Τσιχαποιίας <input type="text"/></p> <p>Τύπος Πατώματος <input type="text"/></p> <p>Τύπος Οροφής <input type="text"/></p> <p>Περιγραφή <input type="text"/></p>	<p>Τελειώματα</p> <p>Επιχρίσματα Εξωτερικού Τοίχου <input type="text"/></p> <p>Επικαλύψεις Πατώματος <input type="text"/></p> <p>Επικάλυψη Οροφής <input type="text"/></p> <p>Θύρες <input type="text"/></p> <p>Παράθυρα <input type="text"/></p>
<p>Φυσική Κατάσταση</p> <p>Προβλήματα <input type="text"/></p> <p>Κατηγορία <input type="text"/></p> <p>Κατάσταση <input type="text"/></p> <p>Είδος Ανακαίνισης <input type="text"/></p> <p>Έτος Ανακαίνισης <input type="text"/></p>	<p>Παράγοντες Παλαίωσης</p> <p>Φυσική Παλαίωση <input type="text"/></p> <p>Λειτουργική Παλαίωση <input type="text"/></p> <p>Οικονομική Παλαίωση <input type="text"/></p>
<p>Υπηρεσίες</p> <p>Είδος Κλιματισμού(Ψύξη) <input type="text"/></p> <p>Τύπος Θέρμανσης <input type="text"/></p> <p>Ανεγκ. Προσωπικού <input type="checkbox"/></p> <p>Ανεγκ. Εμπνευμάτων <input type="checkbox"/></p>	<p>Άλλα Χαρακτηριστικά</p> <p>Θέα <input type="text"/></p> <p>Όψη <input type="text"/></p>
	<p>Διαστάσεις (μ)</p> <p>Πρόσψη <input type="text"/></p> <p>Βάθος <input type="text"/></p> <p>Περίμετρος <input type="text"/></p> <p>Ύψος Ορόφου <input type="text"/></p>

Record: 1/1 List of Values Insert

8.2.3 Prerequisite Information for Mass Appraisal

All models that have been designed can be applied both to perform mass valuations as well as single property valuations, including compulsory acquisition and requisition valuations.

In order to perform any kind of mass appraisal, the following prerequisites should be met:

- All legal and fiscal property characteristics should be available and qualitatively checked into the system
- All sale transactions, rental and cost information are available in each respective file in the database and can be retrieved for statistical analysis
- The parameters that will be the result of the statistical analysis of sale transactions, rentals and construction costs at a specific point in time and should be saved in parameter tables so that are available when the models will be executed.

8.3 Valuation Models

In this part of the paper an attempt is made to describe the current mass appraisal system in the Lands and Surveys Department, without referring to the details of mathematical or

statistical equations per model. The models developed are broadly divided into five categories as follows:

8.3.1 Base Models

These models are using the so called “base value unit” of every subproperty and thereafter if the property is advantageous or disadvantageous, the system will add or subtract accordingly to arrive at the value of the property. These models are the following:

Land Models

- Base Residential/Commercial building site
- Base Industrial building site
- Base Undeveloped field
- Base Agricultural/Livestock fields

Unit Models

- Base Residential/Commercial
- Base Hotels/Tourist Establishments
- Base Schools/Hospitals/Clinics
- Base Livestock Units

Other Models

- Base Plantation/tree
- Base borehole

8.3.2 Base Cost Models

These models are using the so called “base cost unit” rather than the base value, which is the base construction cost for a typical/standard building and thereafter any additional or inferior materials are adjusted accordingly by the system. Also, these models provide for the functional, economic and physical obsolescence of the buildings. These models are the following:

- Retail Cost model
- Office Cost model
- Industrial Cost model

8.3.3 Direct Comparison Models

The principle of this model is the same as the professional practice and is twofold:

- Direct Sales Comparison Method
- Direct Rental Comparison Method and Income Capitalization Method

The first method is performed by selecting and using statistically the best sales that are most comparable to the subject property in order to arrive at the market value of the property. An adjustment is made to the comparable sales' characteristics when compared with the subject property in order to arrive at the market value. These adjustments are qualitative and quantitative.

The second method is exactly the same with the aforementioned described model, but instead of using sales transactions, is using rental information. However, if needed by the appraiser, the system can go one step further by applying or capitalizing the market rent with the calculated initial yield for the specific type of property in order to arrive at the market value.

The calculation of the initial yield is possible as the system picks up all rental information and sales' transactions that are considered statistically to be more comparable between them and the subject property and thereafter the initial yield is calculated by the system in mass. In practical terms is dividing the net income over the capital value. If the initial yield is not possible to be extracted, a parameter table can be used that would reflect the general initial yield of the specific property market, which has been performed either before or after running the model.

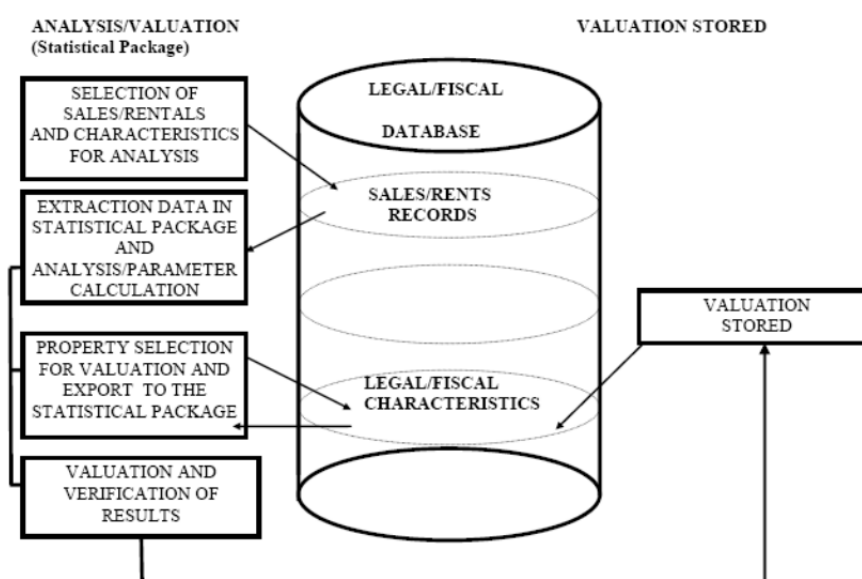
8.3.4 Simple and Multiple Regression Analysis Models

These models perform directly a general valuation or a prediction of the values using a standard statistical package. It is not required to keep parameter tables but this is done directly. Actually, the sale transactions and their characteristics are analysed as compared with the subject property and the valuation or prediction is then applied to all other properties. Basically there are two types of models, which are briefly described below:

Simple Regression Models: These are usually performed when required to make a mass adjustment of the values from one year to another, by applying sale transactions within the same period/year.

Multiple Regression Models: These are usually performed, where there is adequate number of sale transactions for two reasons. The one is to estimate the parameters for the specific geographical area and type of property for all the aforementioned models and the second is to make directly a general valuation or prediction of values using a number of property characteristics. With these models, is also possible to incorporate the time adjustment factor in the quadratic equation as one of the main variables. The process is shown below in a diagram.

General Valuation Process for Simple and Multiple Regression Analysis



9. BENEFITS DERIVED FROM GENERAL VALUATIONS TO THE SOCIETY

In broad terms, a general valuations can serve many objectives that would benefit the public in general and these are described below:

- Increase revenue to central and local governments and injecting money in government development projects with high added value to the economy
- The general valuations can assist the central and local governments in planning and implementing their fiscal policies, both at micro and macro level and can promote economic and development sustainability.
- The general valuation can be an administrative tool in monitoring the trends of the property market and specially the level of mortgage risk that the commercial banks are likely to be exposed in terms of their loan to value ratio. Many of these market inefficiencies were experienced in the latest world economic crisis and the difficulty to predict the unexpected. This administrative tool can also be used to take proactive measures, where the economic environment is turbulent and the economies are experiencing abnormal conditions.
- The regularity of performing general valuations can also through more light into the inefficient property markets and their respective level of values a case which is not possible without performing a general valuation. Also, it is a mean of securing a uniform tone of the valuation list and as a consequence a just and fair property tax for each owner. General Valuations to be fair and equitable must be in sympathy with the value of the adjacent or similar properties.
- General valuations can assist governments in implementing properties indices and

performance measurements and consequently the operation of the markets can be more transparent and efficient in the investment market and the stakeholders. This can also promote cooperation towards public- private partnerships and projects of common interest.

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