



Land Assessment Techniques

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Abstract

An assessment report may involve the assessment of unimproved land (the land that is developed for agricultural or development purposes), the land that constitutes a site (land set up and ready to be used for a specific purpose) or the land component of a built property. In each of these cases, the Valuer must describe and analyze the land in question. A description of a land or site is a detailed list that includes: legal description, other titles and information on the physical characteristics of the land. In the land or site analysis, this information is carefully studied in relation to the neighborhood characteristics that influence the usefulness and tenacity of the land or site are useful in determining the best use (considered as free) and in estimating the value of the land.

Keywords: *assessment, report, land, method*

Introduction

The main methods used to describe real estate are: points and boundaries; a lot or part of a division, division or concession of division; a lot or part of a lot in an urban plan; reference plan; the number of a plot registered in the title plan over the land; and number of units in co-ownership or plan.

The point and boundary system describes the boundaries of a property in terms of reference points. The milestones comprise the starting point, which is also the point of return and all intermediate points that may be surveillance points, milestones, or monuments. Boundaries describe the course or angular direction in which a reference point moves to another. Distances are measured in the description of border and border points. The border and border system was first used to determine the boundaries of parcels of irregular shapes that could not be adequately described by rectangular tracking and some rights of servitude and crossing rights.

Reference Plans represent a description of the property design, which can also be highlighted through the system of margins and margins.

The Rectangular Section Surveillance System, Division and Concession Division has been established to facilitate the oversight and sale of public land.

The system of registered plans and lots simplifies the description of small plots through sections, divisions and the concession system. Subdivisions of the sections are divided into plans, which are then divided into lots and smaller plots.

The evaluator should consider development regulations, possible changes, building norms, physical limitations, and public land use programs, government policies to determine the best use of land or site. The value of taxing a property is rarely a solid indicator of market value. In order to describe the physical characteristics of the land plot or site, the assessor must consider the size and shape, corner influence, excess land, topography, utilities, site layout, location, physical and environmental factors. The evaluator should describe the width and depth of the site, the regularity and irregularity of

the shape, the façade and the depth-to-face ratio. The evaluator should study the interaction of topographic features with land use. The soil and subsoil characteristics are important in agriculture, while the slope, the natural drainage system and the foundation of the land are essential in building construction.

The evaluator collects and analyzes data on the land plot to be evaluated and comparable lots, identifies the related property rights, any legal restrictions, site physical characteristics, all utilities available, and site improvements that affect the site development potential. The value of a site or plot of land is based on its best use, considered free and fit for development in its best and most economical use. It is said that land has value while construction contributes to value. Buildings that do not contribute to the value of the property constitute a penalty for the value equal to the demolition cost. The best use of a site may be existing or different. Establishing the best use should be specific and justified by the market.

Land valuation techniques:

1. Direct comparison.
2. Proportion (allocation).
3. Extraction.
4. Parceling.
5. Residual value technique.
6. Capitalization of the basic rent.

The six procedures used in land valuation are derived from the three value approaches.

Direct comparison is the most commonly used and preferred method of land valuation when comparable data is available. In using this method are analyzed, compared, and corrected sales data of similar plots for differences in property valuation.

Compared items include:

- property rights;
- legal restrictions;
- financial conditions;

- sales and market conditions;
- location;
- physical characteristics;
- utilities available;
- zoning;
- best use.

The Proportion Procedure is based on the typical ratio between the value of the land and the value of the construction, for specific categories of real estate and specific locations. The report is more confident when the construction is more recent. The higher the age, the share of the value of the land in the total value decreases. Proportion is a less decisive method than others, but is useful if comparable transactions are not available.

Extraction is a similar procedure in which the construction contribution is deducted from the total property value. The value of the land derived from this procedure should be used to estimate the value of land in the properties built in rural areas and in cases where buildings contribute little to the total value of the property.

The plotting process is used for land valuation when plotting and development is the best use of the land to be assessed and sales data for such lots is available. The evaluator begins by determining the number and size of batch that can be created by land partitioning, physically, legally and economically. The lots are then analyzed to estimate the sales price most likely the development period and the rate of absorption of the proposed batches. From the anticipated gross sale price, the real state evaluator deducts all direct and indirect expenses and the entrepreneur's profit. Net sales revenue is brought to its present value at market capitalization rate for the period required for project development and market absorption. The resulting value indication should be compared with the prices paid for similar unprepared land parcels and having the best parcel use. There are some more sophisticated variants of this method.

The residual value technique is used when no sales data on similar free land parcels are available. In order to apply this procedure, it is necessary:

- the known or estimated value of the building;
- the known or estimated net operating income (SNE);
- capitalization rates for land and construction extracted from the market.

The evaluator determines which current or hypothetical construction is the best use of the site; then estimate the SNE annually stabilized, generated property. The SNE attributable to the building is deducted from the total VNE and what remains, the residual income of the land is capitalized at the market rate to obtain an estimate of the value of the land. In another variant of the residual land procedure, the evaluator simply evaluates the property as being built and reduces the construction cost and the entrepreneur's profits from the total value of the property.

Capitalization of the base rent is used in the land valuation when the basic rent corresponds to the value of the land owner's interest in the property. Derivative market capitalization rates are used to convert the base rent into an indication of the market value of the land. This procedure is useful when

comparable sales of leased land indicate a range of rents and capitalization rates.

Evaluation of lands

The lands belonging to the commercial company with state capital at the date of their establishment, which are necessary for carrying out the activity according to their object of activity, are assessed in lei according to art. 6 of the Government Decision no.834/1991, by the Management Boards, on the basis of the following formula:

$$V_t = V_b ((1 + N) * k)$$

where in:

V_t – the value of the land;

V_b – the base value of the land determined as the minimum limit at a level of 495 lei/sq m; (this methodology now applies a multitude of updates k currency ratio – leu)

This value was determined on the basis of the price of 5 lei per square meter corrected by 99 years of the concession period; (it is mentioned that in some locations in Bucharest, the concession price per square meter is variable and higher, so the basic price may be considered higher in special cases).

$(1 + N)$ represents the correction coefficient of the base value of the land in which N reflects the sum of the scores granted on criteria and its level will be less than or equal to 9.

Criteria based on which the notes are required for train trains, in the assessment operation are as follows:

a) The category of the locality

- village 0, 1
- communal village 0,2
- city 0,4
- municipality 0,6
- the county seat of the city 1,0
- Bucharest 15 *

b) Location of the land

- land outside the locality 0,0
- land in the peripheral area of the locality 0,5
- land in the middle part of the settlement 0,8
- land in the central area of the locality 1,0

c) Economic functions and social characteristics of the locality

- localities with predominant agricultural activity 0,5
- localities with complex economic functions in industry and services 0,8
- localities with complex economic functions (industrial, services, agriculture) 1,0

d) The position of the land in relation to access to transport networks

- road transport 0,2
- rail transport 0,3
- River transport 0,5
- maritime transport 0,5
- air transport 0,5

e) The technical and municipal equipment of the area where the land is located

- water-channel networks 0,5
- electricity networks 0,5
- heating networks 0,5
- Natural gas networks 0,5
- telephone networks 0,5
- urban transport networks 0,5

f) Geotechnical characteristics of the land

- normal land 1,0
- difficult foundation grounds that require improved compaction, cushions, earth or ballast, ballast ballasts, and so on. 0,2 – land requiring drainage and flood control measures 0,4
- lands in unstable areas – slopes of slopes, landslides
- shingles, shoreline breaks 0,7

g) Restrictions on the use of land in accordance with the general and general urban plan

- related regulations
- function incompatible with the urban plan -1,5
- function compatible with the urban plan with restrictions -1,0
- function compatible with the urban plan 0,5

h) Polluted lands with waste

- gaseous -0,3
- solids -0,5
- liquids -0,7
- *) are the resorts and areas with spa, climatic and tourist potential.

There are, however, some additional points that can be taken into account by the experts, of course not in strict evaluation cases for a state unit.

This methodology was completed by MEF 71906/9.05.1992. "Rules of reevaluation Fixed assets "in accordance with GD no. 26 "1992, whereby the value of the land calculated according to HG. 834/1991, as supplemented by the HG. 500/1994, shall be updated on that date with the coefficient $K_i = 8,873$.

The formula becomes $V_t = V_b ((1 + N) (8,873) k)$, where k will of course be taken into account by the currency exchange only on 30.05.1992 ($\$ = \dots$)

Evaluation of extra-urban (rural)

In order to be better understood some methods of free-valuation of agricultural land in urban and out-of-town areas, methods to be completed with the details of the land (locations, fertility, access, production, etc.)

It should be noted that there is no official or general binding methodology for evaluations.

At the free market price and because of the bureaucratic restrictions included in Law 18/1991, there are practically no transactions in this area, and when selling in this field, the land purchaser believes he will transfer it as intravilan land (as in big wholesale on access roads), and the price is traded no longer through direct transactions without complying with a specific methodology.

In this respect it is worth noting the obviously increased value of all land, likely to become neighborhoods of exclusive villas, wholesale, central warehouses. Comparable values are given in the comparative tables on the localities, a series of prices on the free market.

The lands inside the villages and communes each have a number of individualized micro indications, as shown below, which are indicative, and they can be filled in to best adapt to the reality and the specific situation of each land.

The following macros are to be considered in this spirit:

a) In the countryside, the optimal land for a normal individual household is 1000 square meters.

If this area is below 400 sqm, a decrease of 3–5% is applied. For plots of more than 100 square meters, which can be used for the vegetable, orchard or vineyard, an increase of 5–8% can be granted.

b) The land is located in a commune with access to a paved road or there is a railway station or a dump. Otherwise, a decrease of 3–8% will be applied.

c) Whether or not one has regular bus lines or is linked to a larger number of lands, a 3–5% increase can be granted.

d) The land is – inside the commune – close to the administrative center (town hall, school, shops, police, church) and with good road and road links with the road or railway station, this location gives the right to a 2–5% increase.

e) If the land has the possibility of separate access, in whole or in part, giving the opportunity to lease the vegetable garden or orchard, a 10% increase can be applied.

f) If the land, through its location, makes it possible to transform the building built on it and facing the street – in a commercial space, it is a great advantage and leads to a 10–15% increase.

g) The land is located on a paved street or even on the national road that passes through the town; this is a small extra advantage that can lead to an increase of 2–3%.

Land valuation based on agricultural production

Elements to be considered when establishing the strict production potential of the assessed land are:

a) the nature of the land from a pedological point of view: chernozems, reddish brown, brancig, podzol, saltings, intermediate soils;

b) the area's pebble and area-specific crop, which will be the basis for setting production, including the multi-annual rainfall average;

c) groundwater level.

These (a, b and c) are defined elements of the production taken into account in the assessment of agricultural land.

It is noted that for irrigated land, either from a local or even local system, the production taken into account will be multiplied by a coefficient of 1.3–1.5 compared to a land in the same micro-zone but not irrigated.

The determining factors for determining the costs of exploitation (agricultural works, transport, recovery).

The calculation of the annual net income is made up of the total value of the basic production + secondary production (straw, cocoons, etc.) and then the production costs are deducted.

Production costs are generally considered to be 40% of the gross production value for the vast majority of crops, a level

accepted under conditions of mechanization of agricultural works. This 40% level of production expenditure is calculated for land which in principle meets the following conditions:

- plan land with a tilt of up to 5%;
- land located within a maximum of 2 km from the edge of the locality where the land is located;
- the land next to a practicable road in all seasons;
- land so placed that the largest side has at least 300 m linear;
- ground a groundwater is at a depth greater than 2 m.

If the land surveyed does not meet these conditions, production costs ("CPs") will be corrected with "K" correction coefficients, which will be added to the CP, thus decreasing the annual net income.

The proposed K correction coefficients are:

K1 = 5% for land with a slope of 6-12%;

K2 = 10% for land with a slope above 12%;

K3 = 1% for each additional km above the 2 Km limit from the boundary of the building site, presented in point b;

K4 = 5% for land not adjacent to a modernized road, practicable in all seasons;

K5 = 5% for sloping land of over 6% and not having the minimum side 300 m linear.

Land valuation in urban areas – categories of land use

The land use category is determined by its economic destination, determined either naturally or artificially by the owner of the land. In general, there are two major groups of land use:

- A. Group of agricultural use;
- B. Non-agricultural use group.

Each of the two groups has five categories of use:

- A. arable land;
 - pastures;
 - meadows;
 - are you coming;
 - orchards.
- B. forests and other land with forest vegetation;
 - land with water and sulfur;
 - non-productive land;
 - roads and railways;
 - land with construction and other uses.

Each of the ten categories of land use is subdivided into subcategories. The names of the categories and subcategories of use are accompanied by symbols that are noted in cadastral plans and registers.

The definition of agricultural land use categories is presented below.

Arable land – means land that grows every year or several years and is cultivated with annual or melon plants. Within the arable land are different:

- arable itself;
- arranged for irrigation from which the rice crops, arable with broken trees.

When integrating into arable land, the following criteria are considered:

- a) Land for perennial forage crops, which are up to six years old at a time, is arable land;
- b) Arable land plundered as well as those under development;
- c) Arable land left unhealthy due to floods or other causes, is recorded in arable land;
- d) Arable lands landscaped or improved by desertification, irrigation; only direct productive areas and the areas occupied by the canals are delimited and included in the arable category. They are measured and plotted as linear details and are not included in the production area;
- e) Greenhouse, solarium and planting lands – are delineated on the perimeter of the construction and fall into categories of arable use, making that mention.

Pastures are either grassland or land naturally or artificially grounded by re-seed at 15–20 years. The following subcategories of use are distinguished:

- a) Pastures clean or covered only with grass vegetation;
- b) Wooded pastures are those pastures that apart from grassy vegetation and vegetation vegetation; only those with forest vegetation coverage of 10 ÷ 60% are considered forested pastures. When the forest vegetation is more than 60%, the wooded pasture is considered forest with legal regime in administration;
- c) Grassland pastures are rarely planted pastures with fruit trees to prevent landslides or those from orchards;
- d) Grazing and bush pastures are those pastures where bush and bush have an anti-erosive role and cannot be deflected.

Hayfields are those naturally or artificially grounded or under growed fields through reseeded. The following subcategories appear:

- a) Clean pots are covered with grassy vegetation only;
- b) The wooded meadows are partially covered with forest vegetation or invasion with bush, the coverage being less than 40%;
- c) Hedges with fruit trees come from degraded orchards or pastures where breeding perimeters have been formed and grazing is forbidden;
- d) Hedges with bush and bush are those in which bush and bush have anti-erosional value and cannot be gutted.

The vines comprise all the fields planted with vines. They have the following subcategories:

- a) living grafted and indigenous. Vine grafts are those that are based on a rootstock. Indigenous people are unpatched, developed on their own principles;
- b) live hybrids are those that are also called direct products. This category is endangered because the legislation in force forbids its planting, and the existing ones are isolated, hinders the mechanization process;
- c) vineyard nurseries are land intended for the production of vineyard material;
- d) hop plantations whose fruits are used in brewing.

With the identification and elevation of the area occupied by the vineyards, some details (such as troughs, canals, alleys) are measured and recorded on the topographic plane.

Live crops include all land planted with fruit trees or fruit plantations. These are the following subcategories:

Categories of use	Coefficient of arable transformation of the category of use
1. Arable	1 ha / 1 ha
2. Pastures	1 ha of pasture / 1 hectare of arable land, when the pasture can be turned into arable soil and relief quality. Where pasture differs from arable land around the land, relief and other factors that diminish the production potential, the arable equivalent will be set between 1 ÷ 0.4 ha arable for 1 ha of pastureland.
3. Hay	1 ha = 1 ha arable equivalent in arable land will be between 1 ÷ 0.5 ha arable for 1 ha of pasture.
4. The hybrid lives	1 ha live hybrid = 1 hectare of arable land
5. Noble living	1 hectare of noble can be equivalent to 1 ÷ 4 arable land, depending on soil quality, relief, planting age.
6. Classic cattle	1 ha of classical orchard may be equivalent to 1 ÷ 2 hectares of arable land, depending on soil quality, relief, planting age, well-established fruit basins, and plant production potential.
7. Intensive and superintensive livestock	1 hectare intensive and super intensive orchard may be equivalent to 1 ÷ 3,5 hectares of arable land, depending on the quality of the soil, the arrangement system, etc.

- a) intensive orchard - is the plantation that has a high density of trees at the surface unit, and trees are cared for by a specific technology. Also here are the super - intensive orchards with a density of over 2000 trees / ha;
- b) planting of fruit trees;
- c) fruit nurseries for the production of fruit propagating material;
- d) lobster plantations.

The criteria for equalizing agricultural land by category of use in arable equivalent are presented in the table.

Conclusions

The evaluator should consider development regulations, possible changes, building norms, physical limita-

tions, and public land use programs, government policies to determine the best use of land or site. The value of taxing a property is rarely a solid indicator of market value. In order to describe the physical characteristics of the land plot or site, the assessor must consider the size and shape, corner influence, excess land, topography, utilities, site layout, location, physical and environmental factors. The evaluator should describe the width and depth of the site, the regularity and irregularity of the shape, the façade and the depth-to-face ratio. The evaluator should study the interaction of topographic features with land use. The soil and subsoil characteristics are important in agriculture, while the slope, the natural drainage system and the foundation of the land are essential in building construction.

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Techniki oceny terenu

Raport oceniający grunt może obejmować ocenę nieulepszonych gruntów (gruntów zagospodarowanych pod cele rolnicze lub rozwojowe), gruntów stanowiących teren (gruntów utworzonych i gotowych do wykorzystania w określonym celu) lub części gruntu zabudowanego własność. W każdym z tych przypadków Valuer musi opisać i przeanalizować dany grunt. Opis gruntu lub terenu to szczegółowa lista, która obejmuje: opis prawny, inne tytuły i informacje o fizycznych cechach gruntu. W analizie terenu lub terenu informacje te są dokładnie badane w odniesieniu do cech sąsiedztwa, które wpływają na użyteczność i trwałość gruntu lub terenu, są przydatne w określaniu najlepszego wykorzystania (uznanego za bezpłatne) i szacowaniu wartości terenu.

Słowa kluczowe: ocena, raport, grunt, metoda