STUDIES ON THE ECONOMIC ANALYSIS OF AGRICULTURAL LAND IN THE TOWN HALANGA COUNTY MEHEDINTI

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Abstract

The goal of the paper was to assess the production capacity of agricultural lands for rational use. This paper relies on a selective land assessment of data in literature concerning some general and particular features of the production of agricultural lands at Halânga (Mehedinţi County). The mean land assessment grade thus obtained supplied general information on the suitability of the agricultural lands for different uses and on their suitability for different crops, as well as on their proper use in the production process. They are presented in tables containing data on land assessment grades per land unit, per unit, per farm, and per parcel. Since the production capacity of the lands is impacted by both natural and man-made factors, land assessment should reflect this. In managed and improved lands, the land assessment grade for natural conditions should be multiplied using the land assessment coefficients corresponding to the improvement works in discussion.

*Key words***:** *agricultural, luvosoil, production capacity, rye*

INTRODUCTION

The Commune of Halânga is located in the west of the Mehedinţi County, adjacent to the Municipium of Drobeta-Turnu Severin, and consists of 7 villages: Halânga, Izvoru Bârzii, Baloteşti, Schinteieşti, Schitul Topolniţei, Puţinei, and Răscoleşti. The precincts of these villages developed along the Topolniţei Valley; Baloteşti, Izvoru Bârzii and Puţinei on the left terrace of the river Topolniţa, Halânga and Schinteieşti on the right terrace of the same river and Schitul Topolniţei (Schitul de Sus) on top of a hill surmounting the river valley. [1]

The village of Halânga has the shape of an octopus; it has developed along the communal road DC7 and spread on the terrace slope on the left of the Topolniţa river. There are 12 km from the commune to Drobeta-Turnu Severin, of which 5 on DC7 and 7 on DN67.

The locality was first attested in a written document issued on April 29, 1646. [4]

The village of Baloteşti lies along the communal road DC7, between the river Topolniţa and the slope of the left terrace of the river. There are 3 km between the village and the commune centre, and 15 km between

the village and Drobeta-Turnu Severin on DC7 and DN67. The locality was first attested in a document from August 27, 1571, by Prince Alexandru II Mircea, who mentions Câmpul lui Balota. [3]
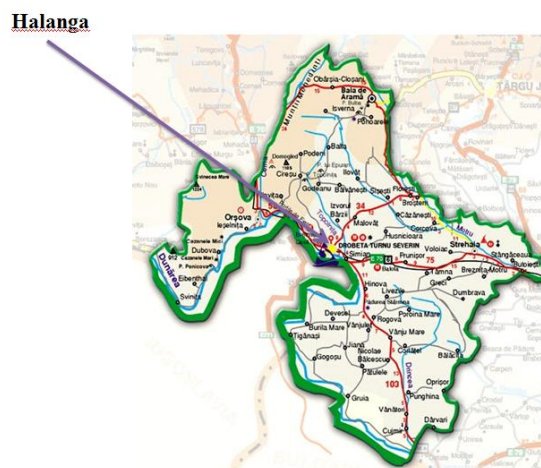

Fig.1. The geographical position of Halanga Village in Mehedintzi County

The Commune of Halânga has an area of 6828 ha; it has a long shape, it goes from north to south, and it belongs to the depression of Severin. The villages have developed within the commune along the Topolniţa Valley: Baloteşti, Izvorul Bârzii and Putinei on the left terrace of the river

Topolniţa, Schinteieşti on the right terrace, and Schitul Topolniţei (Schitul de Sus) on top of a hill surmounting the river valley. [2]

MATERIALS AND METHODS

Assessing agricultural lands is a complex operation aiming at the deep knowledge of the plants' growth and development conditions and at determining the suitability degree of these conditions for each use and crop (given that a land can be suitable for certain uses and crops, but unsuitable for others) through a system of technical indices and land assessment grades [7]. As such, land assessment determines how much better a land is compared to other ones taking into account its fertility as shown by the vegetal production.

The object of land assessment is land that is to be divided so that each area taken into account is as homogeneous as possible from the point of view of all environmental conditions and vegetation factors. These land parcels are called land units (LU) or homogeneous ecological lands (HEL), and they represent the basic units of the land with their specific features, distinct from the neighbouring areas. [5]

For the calculus of land assessment grades we have chosen, from the multitude of environmental conditions, only those that characterise each land unit in our soil study, the most important ones for us, the easiest and the most accurate to measure, and the ones that are usually mentioned in literature (e.g., those that are mentioned in the research carried out by the OSPA – Timiş starting with 1976); these land assessment indices are: index 3. C – mean annual temperatures – corrected values; index 4. C – mean annual rainfalls – corrected values; index 14. – gleysation; index 15. – pseudo-gleysation; index 16 or 17 – salinisation or alkalinisation; index 23. A – texture of Ap in the first 20 cm; index 29 – pollution; index 33 – slope; index 38 – land gliding; index 39 – depth of water table; index 40 – liability to inundation; index 44 – total porosity in the restrictive horizon; index 61 – contents of total $CaCO_3$ within 0-

50 cm; index 63 – Ap reaction in the first 20 cm; index 69 – base saturation level in the Ap or within 0-20 cm; index 133 – edaphic volume; index 144 – humus supply within 0-50 cm; index 181 – stagnant (surface) moisture excess.

In land assessment for natural conditions, each of these indices – except for index 69, which cooperates indirectly – contributes to the land assessment grade through a land assessment coefficient ranging between 0 and 1, depending on the feature (totally unsuitable or optimal) for the use of crop taken into account). [6]

For each index, depending on its scale of use or crop, we designed tables containing their values. [8]

RESULTS AND DISCUSSIONS

Table 1 shows land assessment grades and fertility classes in winter wheat, rye, grain maize and sunflower.

Table 1.Agricultural land assessment at Halânga (Mehedinţi County) in winter wheat, rye, grain maize and sunflower

Soil type	Winter wheat		Rye		Grain maize		Sunflower	
	Land assessment grade	Fertility class	Land assessment grade	Fertility class	Land assessment grade	Fertility class	Land assessment grade	Fertility class
Luvosoil	72	III	70	IV	72	III	70	IV

The analysis of land assessment grades in grains – winter wheat, rye, grain maize and sunflower – shows the following values: in winter wheat and grain maize, land assessment grades have values of 72 and range within fertility class III; in rye and sunflower, the land assessment grade is 70, ranging within fertility class IV.

Table 2 shows land assessment grades and fertility classes in wine grapes and table grapes.

Luvosoil ranges within fertility class IV, with values of land assessment grades of 70 in wine grapes and table grapes.

Table 2.Agricultural land assessment at Halânga (Mehedinţi County) in wine grapes and table grapes

Soil type	Wine grapes		Table grapes	
	Land assessment grade	Fertility class	Land assessment grade	Fertility class
Luvosoil	70	IV	70	IV

CONCLUSIONS

The goal of the paper was to assess the production capacity of agricultural lands for rational use. This paper relies on a selective land assessment of data in literature concerning some general and particular features of the production of agricultural lands at Halânga (Mehedinţi County). The mean land assessment grade thus obtained supplies general information on the suitability of the agricultural lands for different uses and on their suitability for different crops, as well as on their proper use in the production process

The Commune of Halânga has an area of 6828 ha; it has a long shape, it goes from north to south, and it belongs to the depression of Severin. The villages have developed within the commune along the Topolniţa Valley: Baloteşti, Izvorul Bârzii and Putinei on the left terrace of the river Topolniţa, Schinteieşti on the right terrace, and Schitul Topolniţei (Schitul de Sus) on top of a hill surmounting the river valley.

Assessing agricultural lands is a complex operation aiming at the deep knowledge of the plants' growth and development conditions and at determining the suitability degree of these conditions for each use and crop (given that a land can be suitable for certain uses and crops, but unsuitable for others) through a system of technical indices and land assessment grades. As such, land assessment determines how much better a land is compared to other ones taking into account its fertility as shown by the vegetal production.

In land assessment for natural conditions, each of these indices – except for index 69, which cooperates indirectly – contributes to the land assessment grade through a land assessment coefficient ranging between 0 and 1, depending on the feature (totally unsuitable or optimal) for the use of crop taken into account).

For the calculus of land assessment grades we have chosen, from the multitude of environmental conditions, only those that characterise each land unit in our soil study, the most important ones for us, the easiest and the most accurate to measure, and the ones that are usually mentioned in literature (e.g., those that are mentioned in the research carried out by the OSPA – Timiş starting with 1976);

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Luvosoil ranges within fertility class IV, with values of land assessment grades of 70 in wine grapes and table grapes.

Luvosoil in agricultural use are suitable for a wide range of crops namely cereals and corn, but are used with good results in fruit growing and viticulture.

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