

SIZES OF FARMS AND THEIR DYNAMICS IN LATVIA

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Summary. The latest land reform in Latvia has substantially altered the structure of use of farmland plots in property and in use. It resulted in the development of plenty of very small agricultural land properties. More than 60% of all the economically active farms belong to this group. Although, the most part of land of Latvia is being managed by medium and large farms which compound just 39% of all the farms.

The development of land market contributes to the fragmentation of farm areas, because it is not always possible to find land next to the owner's farmland for purchasing or leasing the land for the purpose of the land area enlargement.

Keywords: fragmentation, number of farms, size of farmland.

INTRODUCTION

Rational size of a farmland is one of the preconditions for its sustainable development.

Rational size of a farmland should be understood as the concentration amount of its production forces (land, labour force, buildings, productive domestic animals, etc.) which secures high competitiveness within external and internal markets. Rational size of a farmland provides opportunity to harmonize and use more productive all the production resources, to manage the farm with less losses and to increase competitiveness.

In different times and also recently, number of Latvian and foreign scientists has approached to research on rational sizes of farmlands and their fitness to meet different agricultural needs (Lankelis, 2002; Maasikamäe, Mugu, 2003; Xorjan, 2005; Jankava, Mengots 2009; Sudonienė, 2010) etc.

Land is the main production means of agriculture. All the production organization, amount of the investments and agricultural machinery, building of residential houses and premises, road management and other activities depend on the land area of the farm. Besides, the land area impacts also the amount of the production.

The above considerations and conditions have determined the aim of the work – to consider sizes of farmlands and their dynamics in Latvia.

MATERIALS AND METHODS

Within the research, data on economically active farms in Latvia were generalized from the Central Statistical Bureau of the Republic of Latvia. They are described as farms that are producing agricultural production independently on the amount of the production and its way of use or keeping good agricultural and environmental conditions in the land. Unfortunately, the latest issued data by the CSB of the Republic of Latvia are on the year 2007 which do not provide comprehensive and updated information on the rural structure of Latvia.

In 2010, the CSB conducted agricultural censuses by surveying the economically

active farms of Latvia. CSB specialist I. Januška informed that, according to the CSB agricultural census data of the year 2010, 91.7 thousand farms were surveyed which manage 98.2% of the agriculturally usable land. Five point five thousand farms have left their economically active lives by leasing or selling their lands. Information on more than 2.9 thousand farms was not obtained because the owners could not be met or they declined to give details. Currently, the data are not published yet, and they are treated as provisional results of the agricultural census.

The published data on the year 2007 cannot be compared to the preliminary results on the year 2010 because the grouping intervals of the areas are not matching. It is possible to analyze the summarized results in 2001 by the State Land Service of the Republic of Latvia after the farm surveys of the year 2010. According to the studies, all the farms in Latvia were subdivided conditionally into 4 groups: very small farms till 1.9 ha, small farms from 2.0 – 9.9 ha, medium size ones 10.0 – 49.9 ha and the large farms that exceed 50.0 ha.

RESULTS AND DISCUSSION

The issue of farm sizes became topical during the farm development restoration in 1989. According to the Article 3 of the Law "On Farms in the LSSR" (On the Farms ..., 1989), the farm plot size has to be determined in any case, taking into consideration the family composition of farmer, expected profiles of the household, local conditions, as well as the opportunities of rational usage of the land. However, the law did not regulate directly the minimum and maximum sizes of farms.

Farm size can be characterized by direct and indirect indicators. Direct size of the holding is characterized by the gross production or output of goods in monetary units. By the indirect indicators, only equally specialized and intensified farm sizes can be compared.

Often owned or used real and notional land area (total area, agricultural land, cultivated area, arable land and sown area), number of employees, amount of assets, number of food-producing domestic animals, tractors and machinery and other indicators characterize the size of the farm.

Although the land area is not a direct indicator characterizing the size of the holding, it is used the most commonly for definition or description of the rational household size. The reason for widespread use of this indicator is not only the fact that the land area is relatively constant value, but also the fact that agricultural land is the main means of production, and the entire organization of production, the amount of the necessary investments and machinery, construction of residential and commercial buildings, drainage, road management and other activities depend on the use of the farm land in the area. Besides, the land area impacts also the amount of the production.

Using the farmland size as the indicator characterizing the the size of a holding, we must not forget that its rational value has to be determined in accordance with the industry specialization, intensification, and other factors that influence the rational size of the holding, to allow efficient usage of the land and repayment of the capital investments.

It would be more accurate to consider that using the land area as an indicator, the rational size of the land territory (Лойцмер, 1979), which is calculated as the average size of farms by their land areas, is determined, not that of the holdings.

The latest land reform in Latvia has substantially altered the structure of use of farmland plots in property and in use. It resulted in the development of plenty of very small agricultural land properties. According to the previous studies of the authors (Jankava, 2003) which relied on the data of the State Land Service of Republic of Latvia (LR), yet in 2001, the average total area of farmland plots in property and the land plots in use were only 14.5 ha (Figure 1).

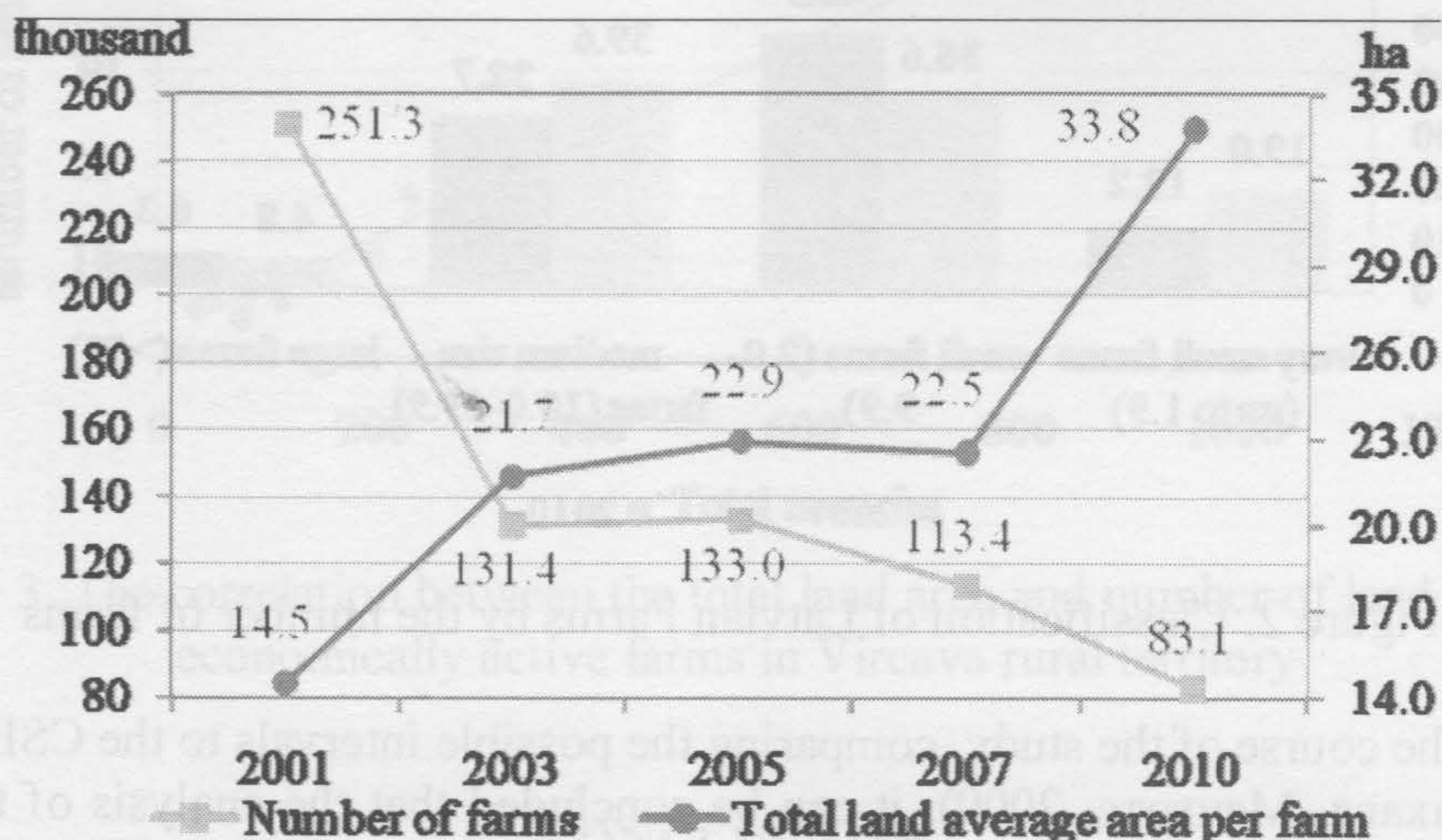


Figure 1. Number of Farms and the Dynamics of the Total Area of Average Size of Land Plots in Latvia

The collected data on the number of agricultural holdings and dynamics of the average size of the total land areas show that there is a tendency of decrease of the number of farms, and growth of the average area by the total area per farm.

After the grouping of the surveyed economically active farms of the Agricultural Census 2010 by the area of agriculturally usable land, it can be seen (Table 1) that the farms managed 1787.2 thousand ha of the agriculturally usable land and their average area was 21.5 ha. Overall, only 6.2% of the total number of farms are agricultural holdings, whose utilized agriculturally usable land area exceeds 50 ha, while the cropped area is of significant percentage (57.2%).

Table 1

Grouping of economically active farms surveyed in Agricultural Census 2010 by utilised agricultural area

Group intervals, ha	Number of farms, thousand	% of the total number	Utilized agricultural area, thsd ha	% of the total utilized agricultural area	Utilized agricultural area on average per farm, ha
up to 1.9	10.1	12.2	9.1	0.5	0.9
2.0 - 4.9	17.8	21.4	61.1	3.4	3.4
5.0 - 9.9	22.8	27.4	163.0	9.1	7.1
10.0 - 49.9	27.2	32.7	531.5	29.7	19.5
50.0 - 99.9	2.7	3.2	184.9	10.3	68.5
above 100.0	2.5	3.0	837.6	46.9	331.3
Total	83.1	100	1787.2	100	x
Average	x	x	x	x	21.5

Basing on SLS and CSB surveyed agricultural census data it can be seen that the situation has changed (Figure 2) during nine years. Pooled data show that small farms (up to 1.9 ha) have decreased by 6.8%, so increasing the number of farms managing 2.0-9.9 ha (12.3%) and the number of large farms with area above 100.0 ha (1.5%).

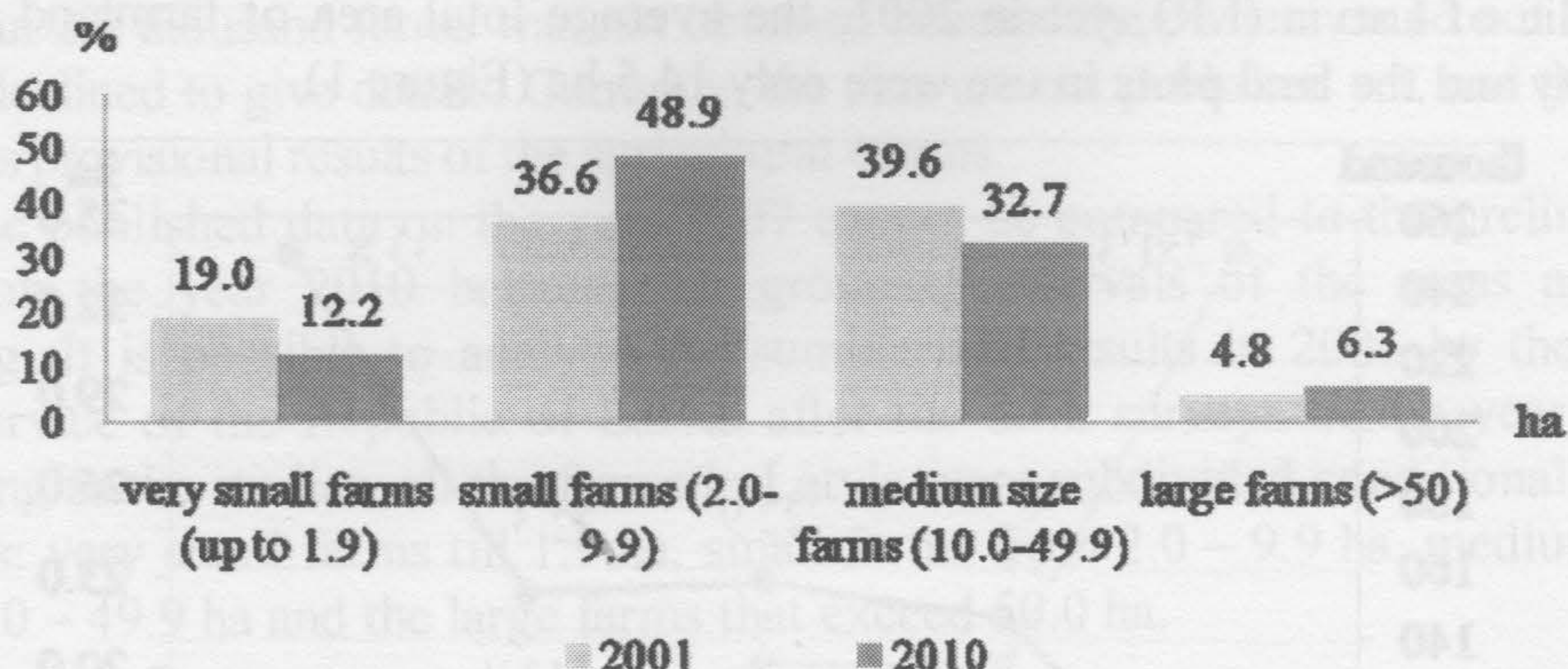


Figure 2. Classification of Latvian Farms by the number of farms

In the course of the study, comparing the possible intervals to the CSB data of 2007 (Янкова, Мейгоцс, 2009), it can be concluded that the analysis of this data shows major changes in the intervals of these years. The data of 2001 show that the number of small farms managing up to 2 ha was 47.7 thousand, while in 2007, the number of these farms increased to 90.5 thousand. According to surveys performed in 2010, the number of economically active farms has decreased to 10.1 thousand. At the same time, in 2007, the number of farms managing 5 to 49.9 hectares of land has increased substantially. The number of medium-sized farms has increased significantly. In contrast, the number of the farms of more than 100 ha fell from 1.7 to 335 thousand since 2001-2007, but, in 2010, it had already reached 2.5 thousand.

It is possible that this reflects the fact that small farms which are unable to survive give the opportunity to larger farms to expand their land areas. In parallel to the processes of land privatization, the land market has also evolved that results in forming of gradually bigger farms through sales, lease or other transactions. The development of land market contributes to the fragmentation of farm areas, because it is not always possible to find land next to the owner's farmland for purchasing or leasing the land for the purpose of the land area increasing.

A strong correlation between the land areas of the farms and the number of land units was found - the larger the land areas of the farms the greater is the number of their constituent land units (Figure 3).

The results of the research show that rural farm production expansion, and thus an increase of the land areas are associated with land fragmentation. formations of new inter - areas.

Land fragmentation makes farming and land management difficult, increases transport costs (Maasikamäe, Mugu, 2003; Хоржан, 2005), but studies of its impact are not sufficient. It is therefore necessary to carry out research on impact of land fragmentation and inter-areas on farm production results.

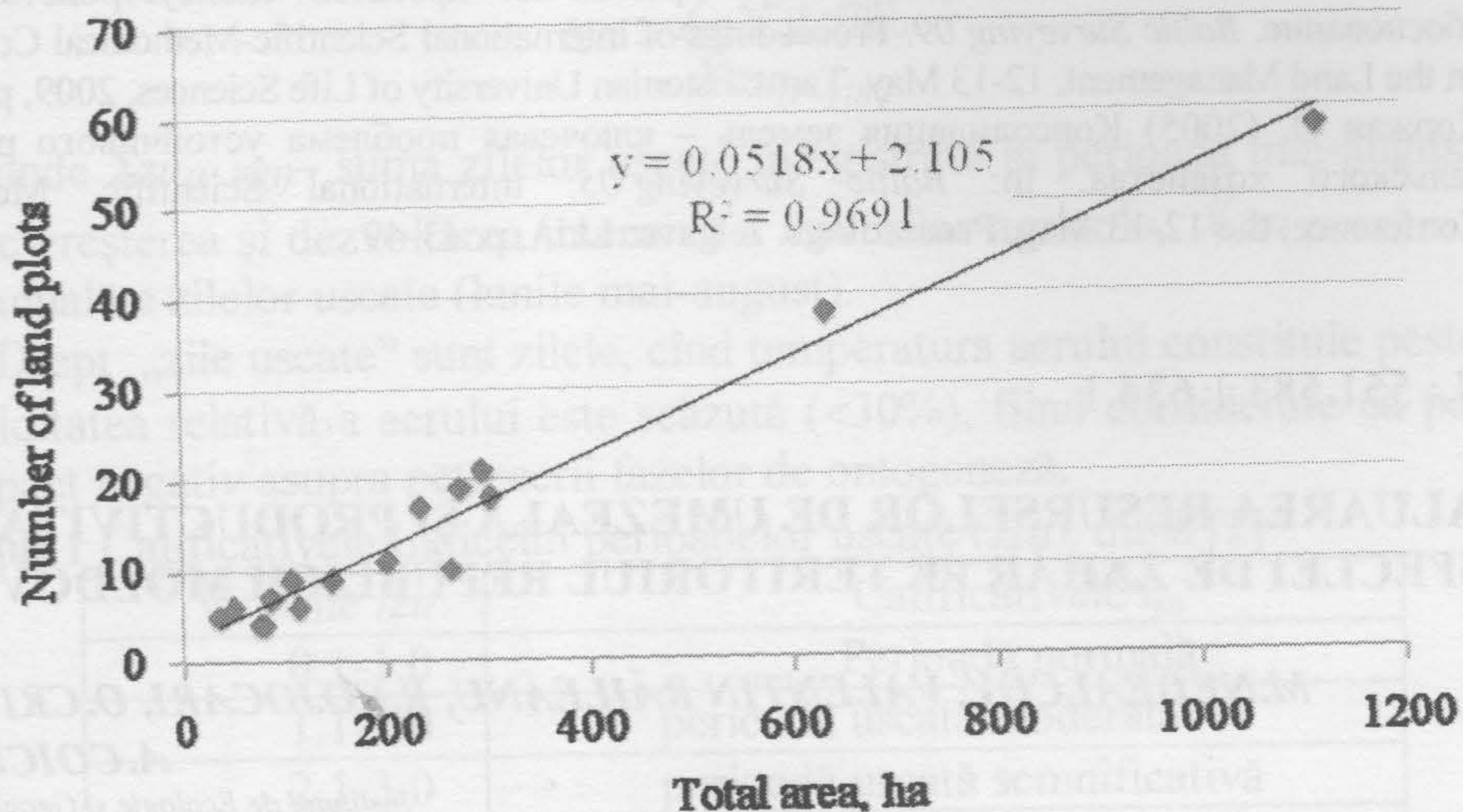


Figure 3. The correlation between the total land area and number of land units of economically active farms in Vircava rural territory

CONCLUSIONS

1. The tendency can be observed in Latvia of increase of the average land area of farms – in 2010, in average, one farm managed 33.8 hectares, which is about 19.3 hectares or 57.1% more than in 2001.
2. Recently, the number of economically active farms has decreased, it has diminished by 26.7% since 2007. At the same time, their used total agricultural area has increased by 0.6%.
3. Number of the very small (to 1.9 ha) economically active farms has decreased by 88.8% since 2007 and the number of the very large farms of over 100 ha has grown by 86.6%. It shows a kind of land consolidation.

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EVALUAREA RESURSELOR DE UMEZEALĂ ȘI PRODUCTIVITATEA SFECLEI DE ZAHĂR PE TERITORIUL REPUBLICII MOLDOVA

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Abstract. Dry Periods Index (*Izu*) is proposed for usage in order to estimate adequately actual humidification resources. It was stated that in Republic's North, Briceni Region, this index constituted significant value of 3.4 in 2009 which indicates dangerous dry period installment in May - August interval. Sugar beet crop has been doubly reduced comparatively with 2008, when *Izu* constituted just 1.3. Obtained results demonstrate us this index's usability in conditions of climatic changes. Geographical Informational Systems as investigation tool allows simultaneously and operatively processing of empirical data and distribute them in space according to local physical and geographical factors on administrative region's level.

Keywords: Agrometeorological conditions, Dry Periods Index (*Izu*), Geographical Informational Systems, Humidification resources, Seleaninov's hydrothermic coefficient (CHT), Spatial evaluation, Sugar beet.

INTRODUCERE

Asigurarea insuficientă a sfeclei de zahăr cu resurse de umezeală condiționează la limitarea cultivării acesteia doar în partea de nord a Republicii Moldova. Tradițional evaluarea resurselor de umezeală [1] se efectuează în cele mai dese cazuri conform valorilor coeficientului hidrotermic Seleaninov (CHT). Astfel, în cazul valorilor acestuia de 1,4-1,5, recolta sfeclei de zahăr este optimă. În contextul schimbărilor actuale ale climei, valorile medii ale CHT variază în limitele 1.8-1.9, în raioanele de cultivare din nordul republicii. În același timp, constatăm recolte scăzute în unii ani luați aparte, datorită resurselor de umezeală insuficiente. Cele relatate, determină necesitatea elaborării unor noi indici agroclimatici, care ar permite estimarea adecvată ale resurselor de umezeală actuale.

MATERIALE ȘI METODE

În lucrarea dată, estimarea deficitului resurselor de umezeală sau a gradului de ariditate este efectuată în baza Indicelui perioadelor uscate (*Izu*), elaborat de [2] și care reprezintă coraportul dintre suma zilelor uscate înregistrate în ani concreți, către media lor multianuală. Acest indice are următoarea expresie: