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Trends in the Use of Land Resources of Amalgamated Territorial Communities in the Lviv Region

Abstract. *The rational use of land resources is one of the challenges facing Amalgamated Territorial Communities (ATC) at the current stage of the decentralization process. The article presents trends in the use of land resources in ATCs in the Lviv region and provides a comparison between the dynamics and structure of agricultural land use in the Lviv region and in Podkarpackie province (Poland). The Lviv region is characterised by a shrinking share of agricultural lands, which are increasingly being used for real estate development. A reverse trend can be observed in Podkarpackie province. In addition, the quality of soils in the Lviv region has been found to be deteriorating as a result of soil cover degradation caused by industry-related pollution. To ensure that soils are used rationally, it is necessary to undertake certain of organizational and economic, ameliorative, agro-technical, agro-chemical activities.*

Keywords: *land resources, agricultural lands, arable land, Amalgamated Territorial Communities*

1. Introduction

Current realia of the globalization of the Ukrainian economy call for drastic changes in the current mechanism of ensuring rational land use and land protection. These changes aim to ensure radical re-structuring of relations and lie in the establishment of the system of sustainable land use. However, for some objective and subjective reasons, in the course of the slong-lasting land reform there have been some delays in the reform of environmental and economic as well as legal mechanisms of rational land use, some formalism in the determination of the goals and tasks.

The above circumstances have led to the situation when the key task of the land reform – to drastically change the attitude to land through introduction of a wide spectrum of ownership forms, engagement of owners who are interested in and capable of efficient, rational, economically beneficial and environmentally safe use of land resources, has not been settled.

As the result, the quality of soils in the region is getting worse, the level of land productivity remains low. Modern lessees normally do exhaustive farming, while state activities aiming at land protection are almost not taken any longer.

Therefore, one of the key tasks of the contemporary state policy in the field of land use is to develop the mechanism to ensure sustainable land use development and, on its basis, to ensure its environmentalization, protection and guarding of land as a component of the environment, preservation, multiplication and reproduction of its productive force as a resource.

2. Literature review

The theoretical basics of the problem of rational land use and land protection development mechanism were laid down by such scholars as V.M. Zhuk [2017], A.M. Tretiak [2014], O.A. Hrytsak [2019], K. Górka [2014], Z. Poławski, M. Łuszczyk [2010], and others.

However, many aspects of the problem under study still remain controversial and stem from further scientific substantiation in the process of new land relationship development. At the current stage no system of sustainable land use mechanism has not been developed. As the result of division into land parcels and transfer of agricultural lands into private property to citizens, the previous system of land use has changed, there have been set up agricultural holdings monopolizing agricultural production, this also leading to some changes, but no new system that would meet the requirements of sustainable land use has been established. That is why there is an urgent need for improvement of the environmental and economic mechanism of rational land use and land protection development.

3. Purpose

The goal of the article is to assess the trends in the use of land resources in Lviv region in order to get the necessary information base for the development of strategic documents related to planning of the structure, quality and efficiency of the land resources in the region.

4. Results

Some ongoing negative processes in the use of agricultural lands affect the environmental status of land use, generally affecting its stability. While in 1988 in Lviv region due to application of 15.1 t/ha of organic fertilizers the losses of humus were fully compensated for, in 2005 the deficit of humus increased by 0.71 kg per 1 ha of arable land as the result of application of organic fertilizers up to 1.0 t/ha and mineral fertilizers from 245 kg/ha to 65 kg/ha. Mineral fertilizers were applied only on a half of arable lands. In 2018 application of organic fertilizers did not meet the needs of soils.

The status of agricultural lands has deteriorated substantially over the last decades and has become dangerous. This primarily refers to soil cover which has lost its self-regulation to a great extent. The overall area of degraded and low-fertility soils of arable lands in the region as of the beginning of 2007 made up 173.8 thousand ha (20.77% of the arable lands in the region). In 2018 itself 3.3 thousand ha of degraded, low-fertility and technogenically-polluted soils were conserved. Recultivation of soils since 2013 has not been conducted. Affected and discharged lands make up over 12 thousand ha and 8 thousand ha, respectively.

Table 1 provides the characteristics of the land resources of Lviv region for the last 8 years. Over this period the share of agricultural lands has gone done from

Table 1. The structure of the land resources of Lviv region and Podkarpackie voivodeship by the types of lands (%)

Types of lands	2011	2012	2013	2014	2015	2016	2017	2018
	Lviv region							
Agricultural lands	57.95	57.9	57.87	57.81	57.78	57.77	57.75	56.80
Forest stock lands	31.81	31.82	31.82	31.82	31.82	30.13	30.13	32.21
Lands under construction	5.14	5.18	5.20	5.26	5.30	5.09	6.61	7.34
Open marshy lands	0.43	0.43	0.43	0.43	0.43	1.49	1.49	0.43
Open lands without plant cover or with minor plant cover	1.40	1.40	1.40	1.40	1.40	0.34	1.83	0.66
Water stock lands	1.96	1.96	1.96	1.96	1.96	1.96	1.96	1.94
Types of lands	Podkarpackie voivodeship							
Agricultural lands	53.47	53.14	52.85	52.56	52.52	51.72	53.9	54.08
Forest stock lands	40.2	40.47	40.75	40.86	40.83	41.52	39.27	39.04
Lands under construction	4.34	4.41	4.47	4.60	4.66	4.76	4.81	4.86
Open marshy lands	0.10	0.10	0.09	0.09	0.09	0.09	0.10	0.10
Open lands without plant cover or with minor plant cover	0.61	0.61	0.57	0.61	0.61	0.61	0.61	0.60
Water stock lands	1.14	1.14	1.14	1.15	1.15	1.17	1.18	1.19

Source: data of the Main Statistics Office in Lviv region, GUS, https://bdl.stat.gov.pl/BDL/dane/podgrup/tablica [accessed: 15.03.2020].

57.8% to 56.8%. The share of the lands for building construction has risen by 40%. The share of open lands with minor plant cover has reduced twice.

Instead, for eample, in Podkarpackie voivodeship (Poland, the region bordering on Lviv region and having almost an identical eco-system of land surface) during the analyzed period the share of agricultural lands was mainly going upwards. In particular, in 2018, as compared to 2016, such growth made up 2.36 p.p. However, the share of forest resources went almost 1 p.p. down. Besides, by the share of agricultural lands, in 2018 Lviv region exceeded the figure for the voivodeship by 2.72 p.p., but it was lagging behind by 6.83 p.p. in terms of forest stock lands. Unlike Lviv region, the share of lands under construction in Podkarpackie voivodeship over the period under analysis did not undergo significant changes (+0.52 p.p.) and in 2018 it was 2.48 p.p. lower than the figure for the region.

Table 2 provides the characteristics of agricultural lands in Lviv region. As we can see it, the share of arable lands is going down both in absolute figures – by 25 thousand ha, and in relative figures – from 62.9% to 62.1%. The area of pastures and perennial plantations is going down. Minor growth is manifested only by hay meadows – by 8 thousand ha.

Similar trends towards the increase in the area of arable lands can also be detected in absolute figures, however, reduction of their share can also be traced in Podkarpatckie voivodeship. Instead, the share of hay meadows and pastures has still preserved its downwards trend both in absolute and relative figures.

The processes of soil cover degrading have become more intensive recently, this being caused by industry-related pollution. The greatest threat for the environment is posed by soil contamination with radionuclides, heavy metals, pesticides, infectious agents.

According to the environmental passport of Lviv region in 2018, negative environmental phenomena spread over more than 50% of the territory of Lviv region. Particularly dangerous in this aspect are Subcarpathia and the Carpathians. In the area of 1.4 mln ha (64%) karst appears, salt basins occupy 0.17 mln ha (8%), there are 450 active motions.

It should be noted that by other qualitative indicators (acidity, marshiness, overmoisturizing) the land plots of Lviv are characterized by a stable trends towards deterioration.

Thus, in the structure of the land resources of Lviv region considerable areas are occupied by soils characterized with unsatisfactory properties (washed away, wind-eroded, lithosolic, overmoisturized, etc.), this being caused by industry-related factors, as well as by negative natural characteristics – these are degraded and low-fertility soils. Their rational use requires certain activities of organization and economic, ameliorative, agro-technical, agro-chemical nature.

Availability of high-fertility lands makes the issues of their intensive use according to their designation, inadmissibility of unsubstantiated transfer of con-

Table 2. The structure of agricultural lands in Lviv region and Podkarpackie voivodeship (ha, %)

Types of lands	2011	2012	2013	2014	2015	2016	2017	2018
	Lviv Region							
All agricultural lands	1265056	1263963	1263370	1262066	1261546	1261200	1260800	1240000
Arable land	796053	795678	794683	793810	794121	793800	793400	770900
Hay meadows	187625	188005	188058	187890	187640	187600	187600	195400
Pastures	257621	256534	256890	256546	255828	255800	255700	250700
Perennial plantings	23043	23031	23023	23105	23242	23300	23400	22800
Structure								
All agricultural lands	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Arable land	62,93	62,95	62,90	62,90	62,95	62,94	62,93	62,17
Hay meadows	14,83	14,87	14,89	14,89	14,87	14,87	14,88	15,76
Pastures	20,36	20,30	20,33	20,33	20,28	20,28	20,28	20,22
Perennial plantings	1,82	1,82	1,82	1,83	1,84	1,85	1,86	1,84
Podkarpackie voivodeship								
All agricultural lands	954163	948295	943170	937886	937196	923013	961962	965058
Arable land	618940	614265	610185	606217	603720	595660	591191	587926
Hay meadows	30777,72	30530,07	30312,22	30100,15	29961,29	29546,63	29310,41	29134,09
Pastures	154154	154303	154326	154643	157356	152844	148913	147790
Perennial plantings	–	–	–	–	–	–	48109	56165
Structure								
All agricultural lands	100,00	100,00	100,00	100,00	100,00	100,00	100,00	100,00
Arable land	64,87	64,78	64,70	64,64	64,42	64,53	61,46	60,92
Hay meadows	12,41	12,43	12,45	12,45	12,44	12,44	11,79	11,71
Pastures	16,16	16,27	16,36	16,49	16,79	16,56	15,48	15,31
Perennial plantings	–	–	–	–	–	–	–	–

Source: data of the Main Statistics Office in Lviv region.

siderable areas of arable lands into the domain of non-agricultural production particularly topical. Therefore, the current system of land protection against their use not in accordance with their target designation requires further improvement, and for this sake along with administrative measures some measures of economic influence, in particular, taxation of non-target use or introduction of fines should be used.

In our opinion, an effective factor in the implementation of sustainable land use must be creation of amalgamated territorial communities, that will enable to optimize land use and to focus the necessary financial resources on the activities aimed at preservation and restoration of land resources.

Unfortunately, Lviv region was not sufficiently active in joining in the processes of decentralization and establishment of amalgamated territorial communities. Thus, according to the open data portal[1], as of the beginning of 2019 the area of the region made up 21,833 sq. km, and its population exceeded 2,513.8 thousand persons. However, out of the general number of territorial communities in the region (556) amalgamated territorial communities made up only 40 units. Their area amounted to 4,867.11 km, or 22.29% of the overall territory of the region (while the average figure for Ukraine is 31%), and the population of ATCs – 343.2 thousand persons, or 13% of the population.

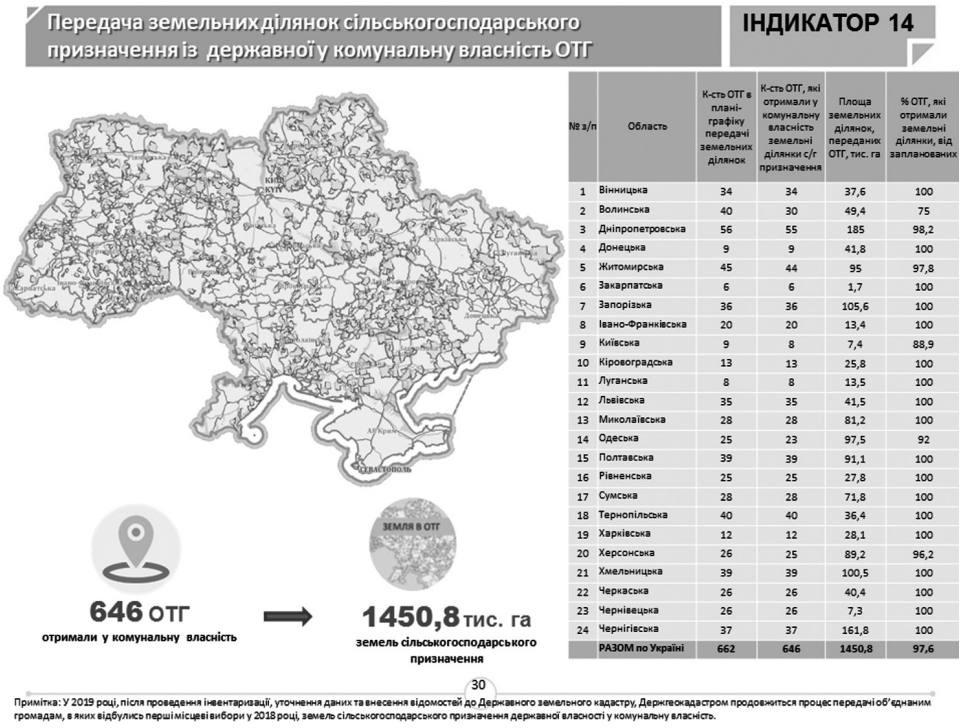
As it can be seen from Figure 1, ATCs of Lviv region cover less than one fourth of the region in terms of territory.

During the decentralization reform ATCs of Lviv region got 41.5 ha of agricultural lands transferred from state ownership to municipal ownership. That makes up only 3.34% of the land resources of the region, having such designation.

For the sake of improving land use it would be expedient to introduce the methods of environmental land use audit and environmental land management project examination as the mechanism of regulating rational use and protection of lands, improving the economic and legal mechanism of rationalization of land use, determining economic losses of agricultural production resulting from deterioration of the quality of lands in temporary use for non-agricultural needs.

The system of environmental assessment of the planned economic activity is now used almost in all the countries of the world and by many international organizations as a preventive, cautioning tool of the environmental policy. Environmental assessment of the rationalization of land use and protection stands for the process of systematic analysis and assessment of the environmental consequences of the planned use of lands as well as taking the results of this analysis into consideration in the planning, designing, approval and taking of activities aimed at improved land use and protection. Assessment of the effect of economic

[1] http://www.portal.lviv.ua [accessed: 15.03.2020].



№ з/п	Область	К-сть ОТГ в плані-графіку передачі земельних ділянок	К-сть ОТГ, які отримали у комунальну власність земельні ділянки с/г призначення	Площа земельних ділянок, переданих ОТГ, тис. га	% ОТГ, які отримали земельні ділянки, від запланованих
1	Вінницька	34	34	37,6	100
2	Волинська	40	30	49,4	75
3	Дніпропетровська	56	55	185	98,2
4	Донецька	9	9	41,8	100
5	Житомирська	45	44	95	97,8
6	Закарпатська	6	6	1,7	100
7	Запорізька	36	36	105,6	100
8	Івано-Франківська	20	20	13,4	100
9	Київська	9	8	7,4	88,9
10	Кіровоградська	13	13	25,8	100
11	Луганська	8	8	13,5	100
12	Львівська	35	35	41,5	100
13	Миколаївська	28	28	81,2	100
14	Одеська	25	23	97,5	92
15	Полтавська	39	39	91,1	100
16	Рівненська	25	25	27,8	100
17	Сумська	28	28	71,8	100
18	Тернопільська	40	40	36,4	100
19	Харківська	12	12	28,1	100
20	Херсонська	26	25	89,2	96,2
21	Хмельницька	39	39	100,5	100
22	Черкаська	26	26	40,4	100
23	Чернівецька	26	26	7,3	100
24	Чернігівська	37	37	161,8	100
	РАЗОМ по Україні	662	646	1450,8	97,6

Figure 1. ATCs of Lviv region

Source: *Monitoring of the power decentralization process and local self-government reform*, https://decentralization.gov.ua/uploads/library/file/477/10.10.2019.pdf [accessed: 15.03.2020].

activity on the land use and protection along with environmental examination of land management projects constitute components of the system of environmental assessment of the rationalization of land use and protection.

Thus, environmental assessment shall be made both in the course of environmental audit, and at the level of specific land management projects related to land use organization. Along with that, environmental assessment should also be conducted at the level of strategic documents (state and regional programs of land use and protection, the schemes and separate large land management projects, etc.).

The process of environmental land use assessment should include:

– analysis (forecast) of prospective effects of the project use of lands on the environment and assessment of its importance;

– coordination of project decisions with the stakeholders for the sake of finding mutually acceptable solutions;

– use of the results of effect assessment and coordination in the decision-making process related to project use of lands.

Environmental assessment of land use can be effective in case its materials are used not just to pass decisions on the possibility of the use of lands within the project in general, but also to pass different decisions in the course of its planning. Therefore, coordination as well as use of the results of environmental assessment in decision-making should be considered as the necessary components of the process of environmental land use assessment.

Due to aggravation of the environmental and resource situation in Ukraine, intensification of degrading phenomena and processes, the need to solve urgent problems of protection and rational use of lands as well as for the sake of creating the mechanisms of implementing some articles of the Land Code of Ukraine, the Laws of Ukraine "On Land Protection," "On the State Control over Land Use and Protection" and "On Environmental Audit," there is a need for improvement of existing and development of new economic and legal mechanisms of land use rationalization. One of such mechanisms is standardization and introduction of standards in the field of sustainable land use. The set of environmental and economic standards as well as norms aims to ensure the regulatory base for achieving the balance between the levels of land use intensity, harmful effect on the land resources and their capacity for soil restoration.

5. Conclusions

Taking into account the natural and economic capacity available in Lviv region, its historical and geographical peculiarities, the strategic goal of prospective land use development lies in creating an effective system of sustainable land use on the basis of most efficient use of land, labour and other resources, which should at the same time ensure material welfare of residents and environmental safety of the region. An important role in the development of rational use and protection of lands is played by economic losses resulting from deterioration of the quality of land. This figure reflects environmental consequences of man-caused activity as well as includes all the negative economic consequences of the violation of lands during construction of non-agricultural facility construction.

Comparison of the conditions of using lands for construction and their use after they return to agricultural production allows to make a conclusion that changes in the quality of lands are accompanied by reduced productivity as well as additional money investment.

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Tendencje w użytkowaniu zasobów lądowych połączonych terytorialnych hromad w obwodzie lwowskim

Streszczenie. *Racjonalność wykorzystania zasobów ziemi jest jednym z wyzwań, przed jakimi stoją gminy na obecnym etapie decentralizacji. W artykule przedstawiono wyniki analizy trendów w wykorzystaniu zasobów lądowych połączonych terytorialnych hromad w obwodzie lwowskim, a także dokonano oceny porównawczej dynamiki i struktury zasobów ziemi oraz użytkowania gruntów rolnych w obwodzie lwowskim i w województwie podkarpackim (Polska). W pierwszym regionie zauważono tendencję do zmniejszania się udziału gruntów rolnych przy zwiększaniu się udziału gruntów pod zabudowę, a w drugim tendencję odwrotną. Ponadto stwierdzono pogorszenie się jakości gleb w regionie lwowskim na skutek degradacji pokrywy glebowej spowodowane zanieczyszczeniami przemysłowymi. Racjonalne wykorzystanie gleb wymaga zatem wielu działań o charakterze organizacyjno-ekonomicznym, usprawniającym, agrotechnicznym i agrochemicznym.*

Słowa kluczowe: *zasoby ziemi, grunty rolne, ziemia uprawna, połączone terytorialne hromady*