

# **ANALYSIS AND POSSIBILITIES OF APPLICATION OF THE AMERICAN EXPERIENCE OF AGRICULTURAL LAND USE ORGANIZATION**

**Dudych Lesia, Dudych Halyna, Soltys Olha, Cherechon Oksana**  
Lviv National Agrarian University (Ukraine)

## **Abstract**

Having analyzed research results, it is ensured that sustainable land use of US agricultural lands for the support to farmers to improve the efficiency of their major activities and adherence to the principles of soil protection and rational land use in farms. An analysis of the American experience allows us to make conclusions that the success of the process of improving land relations depends on the level of their scientific validity, the degree of balance of government regulation and the degree of coordination of participants' interests in transformations and land market transactions. Land lease in the United States of America as one of the economic methods of land use regulation has been analyzed in the article. It has been established that long-term lease relations are beneficial for both parties concerning soil improvement and pollution control in case of clear legislation. Having analyzed foreign experience, the main measures of land use rationalization in the USA, which people can use in Ukraine, have been proposed. It is also possible to implement the US experience in actively controlling the ecological condition, intended use and other quality characteristics of agricultural land to improve regulation of land use in Ukraine. After analyzing the measures for land protection in the United States, taking into account the considered and researched American experience of agricultural land use, ways to improve the existing system of use and protection of agricultural land in Ukraine are proposed.

**Key words:** foreign experience, agricultural lands, rational use, lease.

## **Introduction**

It is important to study the tendencies of world experience and the requirements of modern production to introduce an effective system of organization of rational use of agricultural land. The US land protection and erosion protection system in the United States is well developed and has a lot of participants. Private farmers are the main subjects of protection, as they make decisions on land preservation, mostly independently take measures for their practical implementation. The efficient system of rational use of agricultural lands is mostly voluntary. There are not only many land protection and rationalization programs in the United States, but also several services for the control, protection, and improvement of agricultural land use. In total, there are more than 20 federal environmental programs regulated by the Department of Agriculture. Involuntary and regulatory programs have a small share of US environmental policy and focus more on pollution control and chemical use. The experience of this country is fascinating for Ukraine because in addition to the similarity of natural conditions, the presence of erosion and degradation processes and similar legislation, the US experience is positive and tested in terms of implementing an economic mechanism for land use in Ukraine.

## **Methodology of research and materials**

**The aim of the work** is an attempt to analyze land protection measures in the United States, considering the reviewed and researched American experience in agricultural land use, to suggest ways to improve the existing system of use and protection of agricultural land in Ukraine, to highlight tendencies in land protection and their introduction in Ukraine.

**The following tasks have been accomplished in order to achieve the aim:**

1. to consider key directions of implementation of the process of improving land relations in the United States;
2. to analyze the evolution of land relations in the United States and identify major characteristics of agricultural land use organization;
3. to express the effectiveness of the program of soil protection measures "The Conservation Reserve Program" in the United States;
4. to reveal the measures in the USA which can be implemented in Ukraine based on the considered and researched American experience of agricultural land use organization.

The dialectical method of scientific cognition, which allows studying social and economic phenomena in interrelation and dialectical mutual development on the basis of methods applied, has been objectively substantiated in this article. It is used the method of similarity, which is based on the conclusions about the similarity of causes or consequences in scientific research when it is necessary to determine the cause of any phenomenon that occurs due to different conditions. Considering the presence of circumstances common to all phenomena, it is applied, as a rule, in the study of economic phenomena that can be observed in specific conditions, and does not require artificial intervention in the process of the studied phenomena. The monographic research method allowed studying the experience of land relation improvement in foreign countries thoroughly and

identifying opportunities for its application in Ukraine. The results of the conducted research using a graphical method in the form of graphs and charts have been illustrated and demonstrated.

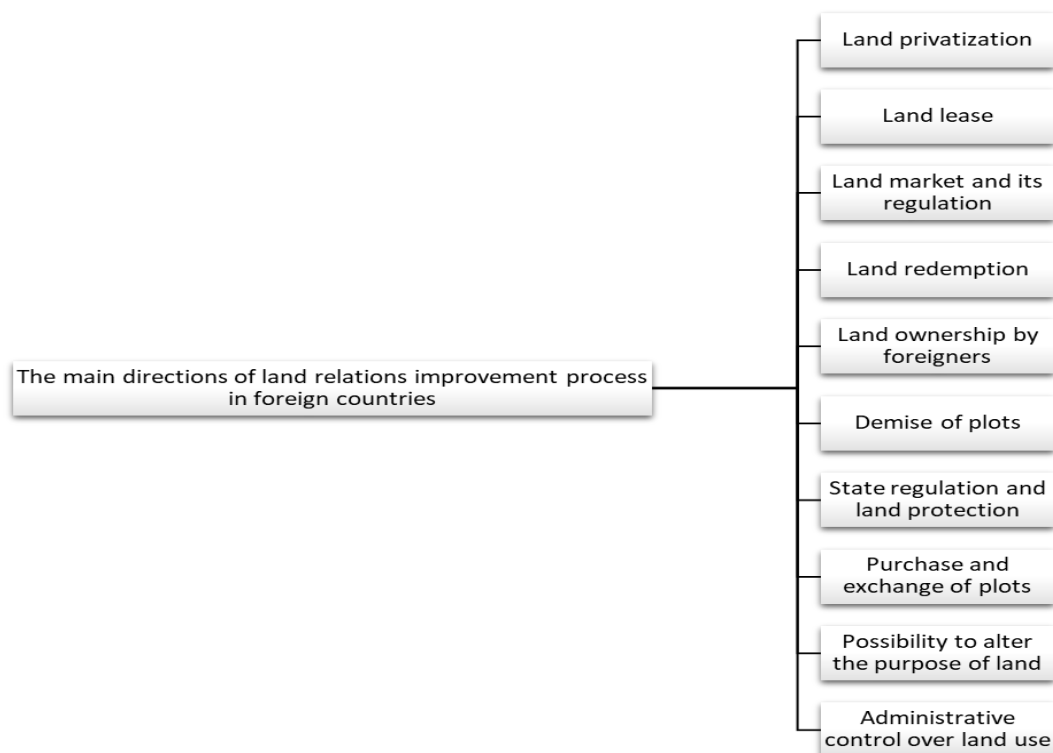
Similarly, the use of the following methods: synthesis methods, analysis, induction, and deduction are combined in the article. Firstly, synthesis methods (*Greek* synthesis – combination, connection) allow researching the phenomenon in its integrity, unity and relationship of its components. Secondly, analysis – division of the subject into constituent elements. Thirdly, induction (*Latin* induction – guidance, motivation) is a method of forming a logical conclusion from the individual to the general. Fourthly, deduction (*Latin* deduction – derivation) is a method of forming a logical conclusion from the general to the individual and analogy, due to which people can achieve knowledge of some objects and phenomena based on their similarity with others. It allowed a comprehensive investigation of the main factors influencing the level of perfection and efficiency of land relations in the United States and concerning this analysis, the main ways to improve land relations in Ukraine can be determined.

The materials used in the work are the works of scientists (articles in periodicals, monographs) relating to the American experience of rational land use and data from US government websites on land conservation and protection programs.

### Discussions and results

The aim of ensuring sustainable land use of US agricultural lands is to support agricultural producers (farmers) for efficiency increase of their main business, and compliance with the principles of soil protection, rational land use in farms. The policy of development and support of agriculture in the USA is based on the principles of continuous and effective accounting of agricultural lands.

An analysis of foreign experience allows us to make conclusions that the success of the process of improving land relations depends on the level of their scientific substantiation, the degree of balance of state regulation as well as the coordination of participants' interests in transformations of land and market transactions (Fig. 1).



**Fig. 1.** The results of generalization of the US experience in the implementation of the main directions of the process of land relation improvement in agriculture. (Sources: Балюк, Гапеев, 2016; Ботезат, 2016; Височанська, 2015; Грещук, 2017; Коритник, Шпичак, 2009)

Land relations and directions of their regulation in the USA are peculiar to some extent. The history of land relations in this country can be divided into two stages. In the first century of the country's existence the main direction of state regulation of these relations by expanding private land ownership was provided. The next stage of the formation of land relations is characterized by the restriction of land areas in private ownership, their repurchase by the state and the strengthening of control over its condition and use in private ownership. Today, the federal government owns 40% of US land fund but none of the arable lands. Most of the lands of the largest state in the United States Alaska as well as Nevada, Utah, New Mexico, Wyoming and Dakota are of federal property (Черевко, Дудич, 2013). The state repurchases land from farmers to transfer it to state or local ownership

and then leases it to large producers. A lot of farmers in the United States manage leased land (29% lease some of the land they manage, 11% manage on the leased land), paying the landowner mostly a fixed portion of the crop or a fixed fee. The latter version is quite common, but it is characterized by a relatively higher risk for the farmer than for the landowner. Although due to the large amplitude of fluctuations in yield levels, the first version is even riskier for the farmer. Sixty percent of farmers in the United States own their lands.

In the United States, the basis for the preservation and restoration of land resources, improving the environment, people's living conditions is the rational organization of agricultural landscapes. In this context, special laws and enshrined economic mechanisms for the ecologization of land relations in law have been adopted. It obliges all land users to comply with these requirements, regardless of land size. In addition to counter-agreements between farmers and the state as well as economic incentives for land users, these mechanisms include emerging ones in Ukraine. They are the following ones: land-use planning with the allocation of environmentally sensitive areas; development and implementation of comprehensive programs that take into account agricultural and environmental aspects of land use; restrictions on the timing of agricultural work, the use of certain agricultural machinery, which are discussed with the landowner before she or he acquires ownership. The main goal of conserving and restoring natural resources in the United States for all participants in this process is to ensure much better use of soil, water, air and biodiversity. Two major approaches in the implementation of this task are used: market one and partnership. The market approach is to implement market principles and mechanisms for protection, which provides a clear system of property rights and the use of market-oriented instruments, including government compensation, benefits, payments and loans to landowners to minimize negative externalities in the environment. The principle of partnership determines the broad involvement of the main participants in this process in land protection, namely: farmers, landowners and land users; government agencies in the field of environmental protection; special local entities, as well as colleges, universities, public organizations, land trusts, and others. (Черевко, Дудич, 2013). In our opinion, this principle should be applied in Ukraine, involving all possible institutions and sources of funding for land protection.

It is necessary to create a special technically competent service responsible for soil monitoring all over the country to solve the problem of information support. Ukraine has a unique experience in organizing large-scale monitoring of soil conditions on agricultural lands due to agrochemical certification, which have been conducted since 1964 by the State Institution "Institute of Soil Protection of Ukraine" (State Institution "State Soil Protection"). Concerning setting up the land market, it is advisable to create such an institution to monitor soil quality, which testifies the successful experience of the United States, where T. Roosevelt established the Soil Protection Service in 1935. Now it operates as part of the Natural Resources Conservation Service USDA (Балюк, Мірошниченко, 2021).

In general, land relations of economically developed countries are carried out today in a developed land market, which is a real form of expression of these relations. It includes virtually all land transactions or, at least, both land leases and land plot exchanges, especially the purchase and sale of land. In this case, the implementation of market transactions with land concerning the purchase and sale of land plots means the purchase and sale of property rights to these plots, rights to use them or property rights and use at the same time.

A positive characteristic of the legislation governing land market relations in the United States is that it allows for the compulsory withdrawal of lands and the transfer of them, to owners and farms that manage competently and efficiently if they use lands inefficiently.

The advantage of American land legislation is also its focus on compliance with the requirements for maintaining soil fertility in any organizational form of land relations. In Ukraine, such mechanisms, neither legal nor economic, that would encourage land users to comply with crop rotation requirements, currently do not exist, as they do not exist in virtually all aspects of careful and environmentally rational use of land and reproduction of soil fertility.

Funding of measures to ensure the functioning of the land management mechanism for the sustainable use of agricultural land comes from the federal budget based on programs via the relevant ministries. It is paid a considerable attention concerning the organization of land management in the United States to the processes of land use planning of areas with certain landscape characteristics: topographic (for example, the level of fragmentation of the territory, location of different types of land, infrastructure, etc.), water, etc. To do it, at the state level, it is used economic methods of land use regulation to protect valuable agricultural land from the irrational withdrawal of them for the acquisition of housing or industrial assets, the organization of construction of non-agricultural facilities. First of all, such methods include the method of preferential taxation of agricultural lands. The idea of the method is to evaluate agricultural land according to their actual use, not market value. Thus, situations where the farmer sells agricultural land for construction, as the latter have much higher market value, will be avoided (Грещук, 2017). It is concentrated on the problem of creating an economic mechanism for regulating soil protection activities in the United States. For example, the strategy of "green" and "red" tickets is widespread in the United States. It encourages farmers who protect the soil from erosion, and provides for a fine through the court for those who violate the established soil protection requirements. Farmers are motivated to mulch and reduces crops of erosion-hazardous crops; they are provided with instructions and projects on environmentally sound organization of the territory and construction of anti-erosion terraces free of charge. In many U.S. counties, as part of a soil protection program, farmers receive \$ 25 to \$ 30 per acre annually for three years for implementing soil protection technologies (Височанська, 2015).

According to experts, the American experience is so fascinating for Ukraine because Ukrainian land legislation is based on American principles. In this context, the lack of a single national land cadastre, differences in the legislation of each state complicate the American land management system. Another interesting feature of the American experience for Ukraine is a certain economic method of influence, typical of the United States. There are many regulations and prohibitions in Ukraine. In the USA, potential land users who want to change the purpose of the land using a legal requirement should pay significant taxes to the budget (Балюк, Гапеев, 2016).

The United States has two main levels of government – the federal level and states. In addition, there is no single legislation concerning land use planning and development. Each state elaborates the relevant documents in accordance with its program of development and organization of the territory (Ботезат, 2016).

In the United States, the lease agreement is usually concluded for a year with its subsequent extension. Long-term leases are lucrative for both parties, in terms of soil improvement and pollution control in case of clear legislation. In the USA, farmers benefit from lease if the market value of the land is higher than the lease one. There are three main forms of lease concerning the distribution of income between the parties and the type of lease: fixed cash (cash), the share of crops (crop products) and the share of livestock products. The state regulates lease relations in different ways. Under the laws of many US states, the applicant for the lease of the farm has several requirements related to the availability of agricultural education, professional experience and programs for the efficient use of leased land. It would be quite appropriate to establish these requirements for Ukrainian farmers as well (Коритник, Шпичак, 2009; Торчук, 2007).

In the United States in the 80s, it is introduced a program of soil protection measures “The Conservation Reserve Program” (CRP), the program of preservation, or “reservation” of erosive areas, withdrawing them from cultivation and sowing of perennial grasses for 10-15 years. Funding using land sales tax under the CRP program was provided. The result of this program for 30 years is the preservation of 9 billion tons of fertile soil from erosion, as well as reduced leaching of mineral fertilizers by 85%. The best results in minimizing the effects of water erosion were achieved among the states in Missouri. Another positive result was also achieved – the approximate structure of the land fund was 1/3 of arable land, 1/3 of pastures and hayfields, 1/3 of forestland. This structure using the “reservation” of agricultural lands was achieved. Land reservation was used for certain practical conservation purposes: coastal buffers (zones); buffers for wildlife habitat; buffers for wetlands; filter strips; restoration of wetlands. Due to these measures in the region, it was possible to improve the quality of water resources, increase the population of flora and fauna for the area and generally optimize the ecological environment of the region. The implementation of the CRP program for individual agricultural formations was carried out. It was also adopted a nationwide program for the formation of a national ecological network, which provided for a number of measures: optimization of land areas, reduction of plowing, the introduction of soil protection systems, creation of ecological corridors, and others. (Бутенко, Харитоненко, 2017).

The implementation of the CRP program is carried out for individual agricultural formations (farms) that have voluntarily participated in it. Farmers participating in this program receive land tax benefits. During the implementation of soil protection measures, the available land resources, specialization and future economic development plans are taken into account. The CRP program is divided into subprograms related to certain optimization solutions (Natural Resources Conservation..., 2021; United States Department ..., 2021).

There are alternative ways to use degraded, unproductive and infertile agricultural lands. As an example, in the United States and EU member states, such lands become natural lands. Due to these lands, forest cover is increased, landscape and ecological problems are solved, recreational areas are expanded, non-food crops (poplar, willows, and others) are grown for pulp production, alcohol, starch, as well as plants to obtain aromatic, flavoring and medicinal substances (Дудич, 2016).

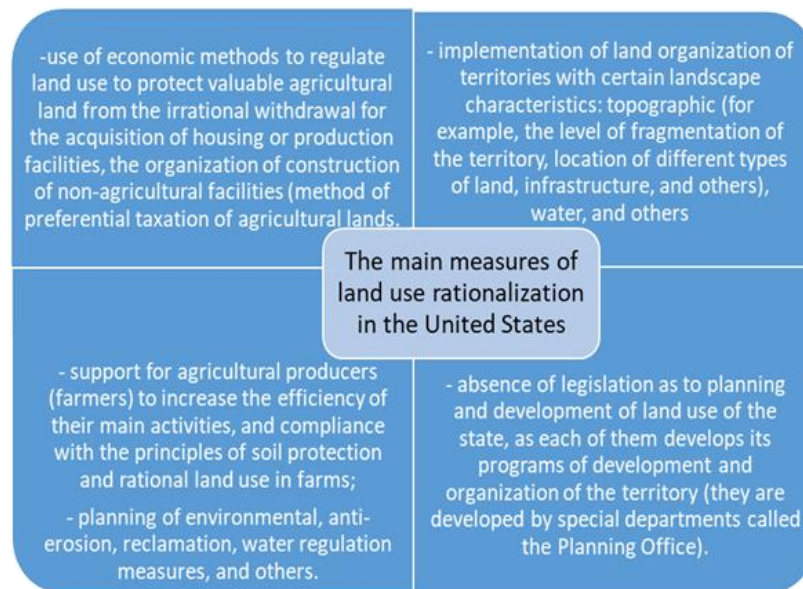
Besides, such measures reduce the level of plowing, which is extremely important for maintaining the ecological balance in the environment, as thus the ratio between the area of plowed land, forage, forests and water bodies is close to optimal. There are stabilizing (forage lands, natural meadows, forests, water bodies) and destabilizing lands (arable land, fallow lands) to determine the optimal ratio.

Considering scientific conclusions, it is necessary to withdraw about 10-12 million hectares of arable land from intensive cultivation in order to approach the optimal ratio between these lands and set the rate of plowing in Ukraine at least 40% (the limit set by research), (Сайко, 2011). According to V. Kulinich, the optimal ratio of lands should be established for each of the natural and agricultural areas, which at the present level are the most homogeneous in the natural and climatic aspect of the territory. Unfortunately, today only higher taxa of zoning (zone-province-district) are sufficiently characterized, and it is not time for the natural-agricultural districts due to lack of funding (Ковалевський, Михайлюк, Семенов та ін., 2003).

Taking into account the analysis of foreign experience, the following main measures of land use rationalization in the United States are identified, which we can use in Ukraine (Fig. 2):

- planning of basic measures to ensure sustainable land use is carried out at the state level in the context of the approval of special programs on environmental protection, conservation and protection of agricultural land, and others;
- planning of environmental, anti-erosion, reclamation, water regulation measures, and others;
- support for agricultural producers (farmers) to increase the efficiency of their main activities, and compliance with the principles of soil protection and rational land use in farms.

- implementation of land organization of territories with certain landscape characteristics: topographic (for example, the level of fragmentation of the territory, location of different types of land, infrastructure, and others), water, and others.
- use of economic methods to regulate land use to protect valuable agricultural land from the irrational withdrawal for the acquisition of housing or production facilities, the organization of construction of non-agricultural facilities (method of preferential taxation of agricultural lands).
- absence of legislation as to planning and development of land use of the state, as each of them develops its programs of development and organization of the territory (they are developed by special departments called the Planning Office).



**Fig. 2.** The main measures of land use rationalization in the United States (results of the analysis of the American experience). (Source: author's development).

The USA uses a wide range of methods and measures to rationalize land use. These include strict bans and penalties, as well as economic methods of incentives, taxation and financial support for businesses. There is also a wide variety of land protection and management programs at various levels in the United States. The US experience should be implemented in controlling the ecological condition, intended use and other quality characteristics of agricultural land for the improvement of land use regulation in Ukraine.

### Conclusions and proposals

Concluding the above-mentioned results of the analysis of the American experience of land use regulation, this country uses a wide range of methods and measures to rationalize land use.

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#### **Information about authors**

**Lesia Dudych**, Ph.D, Associate Professor of Department of Land Organization of Lviv National Agrarian University. Address: Lviv-Dublyany, Ukraine, 80381, phone: +38 097 159 84 41, e-mail: [dyduchl@ukr.net](mailto:dyduchl@ukr.net) Fields of interest: land use planning, land management, economic mechanism of rational land use.

**Halyna Dudych**, Ph.D, Associate Professor of Department of Land Organization of Lviv National Agrarian University. Address: Lviv-Dublyany, Ukraine, 80381, phone: +38 097 670 12 50, e-mail: [dudych\\_g@ukr.net](mailto:dudych_g@ukr.net) Fields of interest: land management, organization of the territory, efficiency of land relations.

**Olha Soltys**, Ph.D, Associate Professor of Department of Land Organization of Lviv National Agrarian University. Address: Lviv-Dublyany, Ukraine, 80381, phone: +38 096 301 47 77, e-mail: [soltysog@gmail.com](mailto:soltysog@gmail.com) Fields of interest: land management, optimization of land management decisions, environmental aspects of land use.

**Oksana Cherechon**, Ph.D, Associate Professor of Department of Land Organization of Lviv National Agrarian University. Address: Lviv-Dublyany, Ukraine, 80381, phone: +38 097 530 09 33, e-mail: [okcherechon@gmail.com](mailto:okcherechon@gmail.com) Fields of interest: environmental economics, organization of the territory, land protection.