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Monitoring of environmental and economic risks in the regulation of the agricultural land market in times of war

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SUMMARY

The article analyses the introduction of a new procedure for regulating the turnover of agricultural land and the functioning of the land market under martial law in Ukraine. It is determined that the main reasons for the negative trends in land relations are hostilities and temporary occupation of rural areas, which complicate land transactions and the exercise of property rights. The author examines the key environmental and economic risks of land market regulation, particularly land auctions, which affect the availability of land resources for agricultural production. The author analyses the financing of the land market in the post-war period, which is a prerequisite for sustainable development. A structural and logical scheme of the mechanism for developing land relations in Ukraine is proposed, which allows for modelling the strategic planning of the agricultural land market. This approach will facilitate effective regulation of land processes and minimise risks in the field of land use.



Introduction

The basis of market land relations in Ukraine is transferring agricultural land to individuals and legal entities. From 2001 to 2021, a moratorium on their sale restricted owners' rights, hindered investment and lending and facilitated corruption schemes.

Long-term leases of agricultural land depleted soils and reduced yields. The war started by Russia on February 24, 2022, has slowed down the economy. Further market development depends on political, economic, and social factors. For it to work effectively, the government must ensure transparency, equal access to resources, and protection of property rights.

The optimal model of the land market remains a matter of debate. The key issues are the balance of private and public ownership, limiting the area and concentration of land, which will determine the future structure of the market.

Method and/or Theory

The theoretical and methodological basis of the study includes an analysis of land use, systematisation of economic and statistical data, and assessment of the impact of soil conditions on the land market. The methods used to determine territorial differences in prices, priority areas of development, and forecasting of management decisions.

Results

Scholar A.M. Tretyak emphasises that the proclamation of the right of private ownership of land is not enough - it is necessary to create a mechanism for its implementation, ensuring possession, use, and disposal. The property loses meaning if a citizen cannot do this (Tretyak, 2020).

Ukraine's statehood was formed by political speculation about land ownership. A moratorium on the sale of agricultural land was in place for more than 20 years, limiting citizens' rights and investments and promoting the development of the “grey” market through emphyteusis, leases, and donations. Only on July 01, 2021, the land market officially started working, revitalising the economy. In the first eight months, 10-15 thousand transactions were concluded every month, but the war slowed this process. In June 2022, a new land turnover law was adopted (Olena Rybina, Kadhim Inas Hasan, Adnan Dawood Muhammad, Yusra Alobaidi, Goncharov Viktor, Prokopenko Nataliia, Boginskaya Lyudmila (2022).

The war has led to soil contamination, the destruction of 21% of agricultural land, and 2.6 million hectares needing demining. The disturbance of soil structure increases erosion, and uncontrolled use of leased land depletes the fertile layer. Real estate registers and cadastre have been suspended, and state and communal land sales have been banned. A simplified lease without bidding was introduced - for up to a year, without a cadastral number, with a rate of up to 8% of the normative valuation.

Since October 2021, 3,850 plots (34.6 thousand hectares) have been leased through auctions, bringing UAH 326 million to communities. The average rent increased from UAH 2.3 to UAH 9.4 thousand per hectare. In 2023, the price of agricultural land increased by 10.4% to 38.5 thousand UAH/ha, while rents stabilized at 7.8 thousand UAH/ha. In the first half of 2023, community budgets received over UAH 17.2 billion from land transactions.

The market was expected to cover 5-8% of agricultural land, but this figure does not exceed 1.5% due to the war. Some land is under occupation or mined, increasing demand for land in the rear areas.



In the EU, prices for agricultural land grow by 20-25% annually. In Ukraine, they have increased by 20% over the two years of war. Demand is higher than supply, which is a positive factor even in times of instability. Due to the economic uncertainty, land remains an attractive asset - its value decreased by only 5% during the crisis.

The key areas of agricultural sector development are attracting investments and mortgage lending, which requires opening the state land market. The stage scheduled for 01.01.2024 will allow agricultural enterprises to become landowners and facilitate business development.

Professional investors are showing interest in agricultural land and real estate. Economic fluctuations have minimal impact on its value, as transactions are tied to the exchange rate. To launch the market effectively, it is necessary to create mechanisms that will support the economic security of the state (Figure 1).

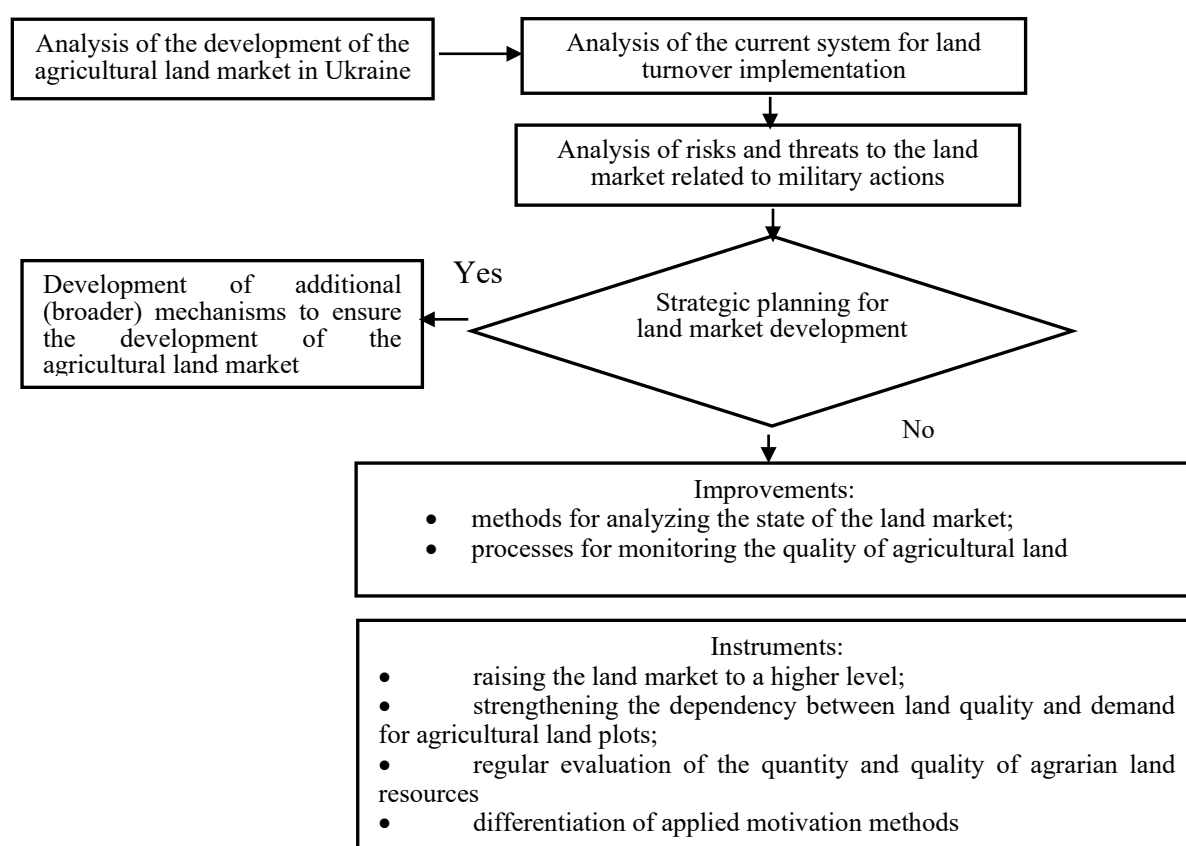


Figure 1 Algorithm for the Mechanism of Agricultural Land Market Development (developed by the authors).

It is necessary to establish norms for regulating restoration land management and urban planning measures in the post-war period and define the authorities' timing, content, and powers to implement them, which is currently absent in the legislation. It is essential to introduce new terms related to the use of land affected by the war, such as “depreciation of agricultural land” and “soil damage.”

Soil depletion is the loss of soil capacity for productive farming due to degradation and depletion, affecting land's market value. Depreciation of land means a critical deterioration in the quality of the land stock and an urgent need for restoration.



In the post-war period, it was essential to establish an expert group for land market development according to the current legislation. (Figure 2).

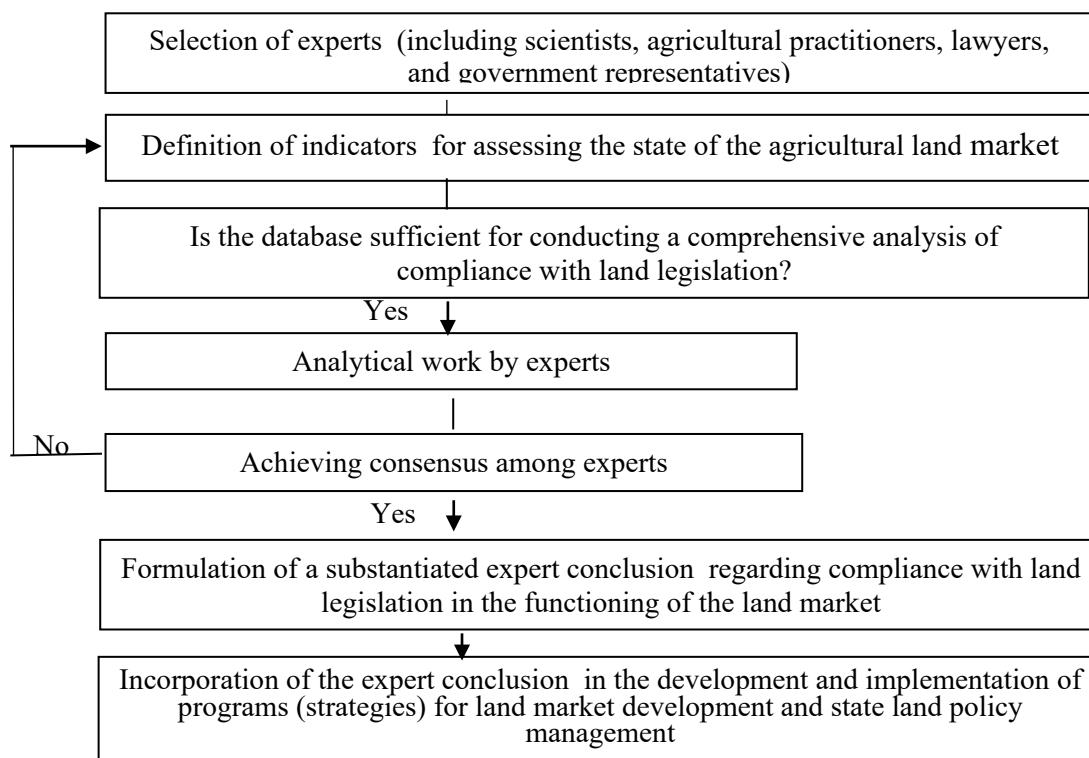


Figure 2 Algorithm for Expert Evaluation of Land Market Development in the Post-War Period (developed by the authors).

There is a need to develop regulatory documents, methods, and procedures to assess the damage caused to land use due to hostilities and terrorist acts. This applies to losses associated with damage and destruction of the fertile soil layer and pollution and contamination of land resources, which negatively affect biodiversity and the productive potential of land and property (except buildings and structures).

In addition to maintaining a land cadastre, it is necessary to introduce environmental certification of agricultural land to monitor contaminated areas and limit negative environmental impacts. The environmental passport of land should become the basis for certifying regions, climatic zones, and Ukraine. After all, the ecological condition of agricultural land determines the quality and safety of farm products, directly affecting agricultural land resources' market value.

Geographic information systems (GIS) and remote sensing (RS) allow us to assess the dynamics of soil changes, analyse land degradation, and predict the risks of erosion and pollution. Satellite technologies map the affected areas, determining the pollution level and the need for reclamation. Economic and environmental modelling methods help predict land policy's impact on the environment, and scenario analysis helps assess the consequences of different land-use options after the war. Soil fertility monitoring includes the study of chemical composition, organic matter, and biological activity, which helps to develop strategies for soil restoration. It is essential to create integrated databases on the state of the land stock and introduce indicators, such as soil organic carbon levels or erosion index, to help predict changes and set policy priorities.



Without proper environmental control, there is a risk of massive land purchases by investors, which could lead to over-intensification of agricultural production and resource depletion. It is essential to strike a balance between the economic benefits of the land market and long-term environmental sustainability. Key areas of government policy should include introducing environmental insurance and green finance, including lending to restore degraded land.

Conclusions

The development of the land market should consider both economic and environmental challenges. The war caused significant losses of land resources, which required restoring soil fertility and controlling land use. GIS analysis, remote sensing, and economic modelling should become key tools for regulating the land market.

A comprehensive system of environmental risk assessment and a strategy for minimising them should be implemented. Environmental certification of land, control over investments in sustainable land use, and the development of effective mechanisms for state regulation of the land market and environmental and economic risks remain priority tasks. GIS analysis, remote sensing, ecological monitoring, and financial modelling should become the main tools of state regulation in land use. Critical areas include restoring soil fertility, controlling land use, and ensuring investments in sustainable land use. Given the military losses, it is necessary to create a comprehensive system of environmental risk assessment and develop a strategy for environmentally safe development of the Ukrainian land market.

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