
Land Resources and Land Use Management in Ukraine: Problems of Agreement of the Institutional Structure, Functions and Authorities

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Abstract:

Purpose: The article aims to present and discuss the analysis of the institutional structure of land resources and land use management in Ukraine.

Design/Methodology/Approach: Sustainable logical and structural integrity of the institutional structure of land resources and land use management is considered as a precondition for economic, ecological, and social growth of the country, the security of social well-being base on legally approved tasks and powers as to agreement of the distribution of responsibilities and authorities between managerial bodies in terms of performance of the functions and regulatory mechanisms of land resources and land use management by the bodies of the executive branch and local government.

Findings: Analysis of the institutional structure of land resources and land use management in Ukraine confirms sufficient differentiation and scattering of the managerial functions between numerous state institutions and lack of the appropriate coordination of managerial decisions and control for exercising the authorities and responsibilities.

Practical Implications: The proposed matrix of distribution of the responsibilities and authorities enables identifying the potential of institutional transformations in terms of efficient management of land resources and land use, particularly the implementation of changes, which are necessary for Ukraine.

Originality/Value: It is proved that the most critical factors for the effectiveness of sustainable land use policy are the establishment of a simple managerial vertical and horizontal of institutions, adequate space organization of the territory, securing working relation "bottom-up" and "top to bottom" of the decisions, and actions of all institutes and structures of the land policy, including bodies of executive power with local government, with individual land-owners and land-users.

Keywords: Land reform, land resources management, management of land use, managerial functions, authorities of managerial bodies, land fund, sustainable development, public welfare.

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1. Introduction

According to Ukrainian scientists like A. Martyn and L. Novakovskij (2019), M. Matvieiev (2018), A. Tretiak and N. Tretiak (2017), M. Khvesyuk (Khvesyuk *et al.*, 2013), the multi-stage land reform, which started in Ukraine in 1990 and is currently not completely implemented, reduces the market price of land, deteriorates conditions and components of the environment, increases ecological hazard in the process of economic activity, particularly blunts efficiency of farming and competitive capacity of not only some economic entities, i.e., land-users, but also the local and national economy in total. However, according to Dieu (2016), a clear policy on the rural land will provide a new stimulation for agriculture and rural development.

Ukraine is one of the largest countries in Europe, as its land fund accounts for 60 354.9 thousand ha, i.e., 5.7 % of the territory of Europe. The largest share is taken by arable lands, occupying the area of 32 541.3 thousand ha, or 78.4 % of the total area of agricultural land, that is 53.9 % of the total area of Ukraine. It speaks for a high level of land development and, thus, the degree of land plowing.

The fact declares about the existence of institutional problems in the field of land distribution, resulting in an increase of ecological hazard in economic activity. Since 2015, institutional transformations in Ukraine, particularly power decentralization, have contributed to the solution of the principal problem of a continuous and uncompleted process of land relations reforming, i.e., a delegation of the right to administer communal land to local, territorial communities, as well as prospects of initiation of the market of agricultural land plots for running of commercial production, and land parcels (shares) for private peasants' farming. The authors of the article consider that overlapping of power bodies' competencies within one administrative unit causes adverse effects of inefficient management of land resources and land use that is the most significant problem. The hypothesis of the research suggests that identification of overlapping, inconsistency, inefficiency, or absence of the appropriate authorities of power bodies in terms of the system of managerial functions (in particular, such as forecasting, planning of land use, assessment of the resource, organization of land use and protection, the motivation of efficient land reclamation, recording of land resources, analysis, and monitoring of land use and protection) will disclose the potential of the institutional transformations concerning land resources and land use. In contrast, implementing the required changes will create an environment for the good efficient, systematic practice of the management of land resources and land use to improve public welfare and sustainable development.

2. Materials and Methods

In the research, the authors used legislative and normative documents of Ukraine concerning nature management and land use, official statistical materials of the State Statistics Service of Ukraine, the State Service of Ukraine for Geodesy, Cartography and Cadastre, as well as national and foreign scientific publications, devoted to the

solution of the most critical global tasks, preconditions of sustainable development and issues of land resources management and land relations regulation.

The article used the following general scientific methods of research, particularly analysis and synthesis, theoretical generalization, and comparison - to study the institutional environment of the management of land resources and land use, to analyze the current system of bodies authorized to manage land resources and land use, for assessment of the performance of the set tasks by managerial institutions and efficiency of their regulatory impact on conditions of land resources, as well as ecological-economic and social efficiency of land use.

The research refers to the recent available public data about the land fund of Ukraine, provided by the State Service of Ukraine for Geodesy, Cartography and Cadastre. Blanks in public available data are caused by the fact that according to paragraph 9 of the Resolution about the State Statistics Service of Ukraine No. 481, approved by the Cabinet of Ministers of Ukraine on September 23, 2014, the Order of the State Statistics Committee of Ukraine No. 377 of November 5, 1998 "About approval of the forms of state statistical reports about land resources and Instructions for preparation of the state statistical reports of the quantitative accounting of land (forms №№ 6-zem, 6a-zem, 6b-zem, 2-zem)" ceased to be in force in order to bring statistical, regulatory acts by the norms of current laws (State Statistics Office of Ukraine, 1998). However, the Ministry for Regional Development, Construction and Public Housing and Utilities of Ukraine signed Decree No. 337 of December 30, 2015 "About approval of the forms of administrative reporting about quantitative accounting of land (forms No.No. 11-zem, 12-zem, 15-zem, 16-zem) and Instructions of their completing", and authorized the State Service of Ukraine for Geodesy, Cartography and Cadastre to transfer data of the state statistical reports from the quantitative accounting of land (forms No. 6-zem, 6a-zem, 6b-zem, 2-zem) to the forms of reporting, expected by the Decree, concerning quantitative accounting of land (forms No. 11-zem, 12-zem, 15-zem, 16-zem) until July 1, 2016, and since then, to secure the quantitative accounting of land according to the approved forms of administrative reports (Ministry for Regional Development, Construction and Public Housing and Utilities of Ukraine, 2015). Nowadays, the mentioned process of transfer of the data of the state statistical reporting of quantitative accounting of land is not completed, verifying the hypothesis of our research.

3. Results and Discussions

The present threatening environmental conditions, aggravation of ecological problems, and imperfect ecological status of land use require institutional transformations and change of the logics and conceptions of the approaches to efficient economic, ecological, and social development, as well as fuel the development with consideration of Ukraine's international liabilities and European integration attempts, first, in terms of ecological focus in the land policy. In Ukraine, there are significant risks of an escalation of the environmental hazards caused by pollution of air, water, and soil, exhaustion, and pollution of land, forest, water, and

other natural resources because of improper economic activity. Thus, local, and national ecological problems aggravate global problems, primarily negative processes of increase of land degradation and desertification, impacting climatic changes.

Analysis of the land fund of Ukraine confirms a too high level of living environment development, i.e., correlation of anthropogenic and natural environment-stabilizing lands. It constitutes 3:1 (Table 1), where 45 279.3 thousand hectares (75 %) of the land of the territory of Ukraine are employed for economic needs, and only 15 075.6 thousand hectares (25 %) are environment-stabilizing lands.

Table 1. Land fund at the beginning of 2016, thousand ha

Anthropogenic area		Natural land area	
Agricultural lands including:	42726.4	Forests and other wood-covered area	10633.1
arable land	32541.3	Swampland	982.3
grassland	233.7	Dry open land, covered by specific vegetation	13.2
perennials	892.4	Open land without vegetation or with insignificant vegetation	1020.6
hay fields	2406.4		
pastures	5434.1		
Build-up land	2552.9	Water bodies	2426.4
Total, thousand ha	45279.3	Total, thousand ha	15075.6
Referring to the total area, %	75.0	Referring to the total area, %	25.0

Source: Composed according to the latest data of the State Service of Ukraine for Geodesy, Cartography and Cadastre.

Lack of efficient multi-level management of land resources and land use has resulted in the overlapping of power bodies' competencies within one organizational unit. According to the distribution of responsibilities and authorities of the subjects of land resources and land use management, the authors of the work have developed a matrix of responsibility for the performance of management's functions and regulatory mechanisms (Table 2).

Studying the current institutional structure of management of land resources and land use in Ukraine, it is worth noting that it has a multi-level and complex character inefficient (acting) management. It is caused by the extended period of structural reconstruction from a center-planned national economy to a centralized one, focused on the market, the impact of the dynamics of political changes, and the absence of a standard idea about the results of institutional transformations.

Figure 1 demonstrates the institutional structure of land resources management and land use in Ukraine, valid on August 28, 2019. According to the current land policy of Ukraine, one should note such institutional frames of responsibilities and authorities of the central power bodies of land resources and land use management in Ukraine.

Table 2. Matrix of the distribution of responsibilities and authorities of managerial bodies concerning performance of the functions and regulatory mechanisms of land resources and land use management

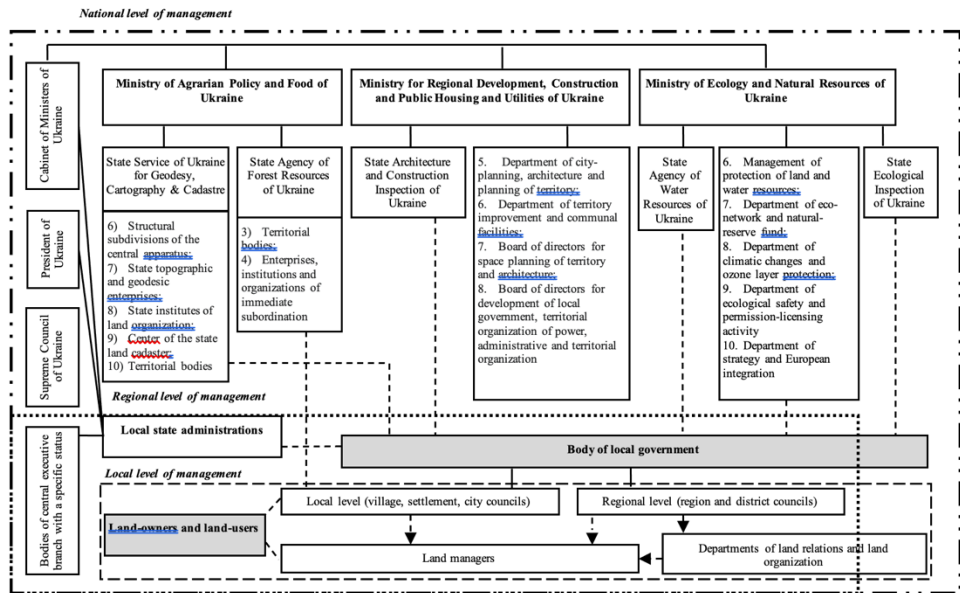
Functions and regulatory mechanisms	Bodies of management and their authorities									
	Supreme Council of Ukraine (SCU)	Bodies of local government (region, district, village, settlement, city)	Central bodies of executive power							Land-owners and land-users (residents/ non-residents)
			Cabinet of Ministers of Ukraine (CMU)	which secure shaping of the state policy in the field of environmental protection, in the field of land relations	which exercise the state policy in the field of environmental protection, in the field of land relations	which secure shaping of the state policy in the field of land relations	which secure implementation of the state policy in the field of land relations	local state administrations in the field of land relations	state bodies of privatization in the field of land relations	
Forecasting	-	+	+	+	+	+	+	+	+	+
Planning of land use	+	+	+	+	+	+	+	+	+	+
Assessment of the resource	-	+	-	+	+	+	+	-	+	+
Organization of use and protection of land	-	+	+	+	+	+	+	+	+	+
Motivation of efficient land reclamation	-	+	+	+	+	+	+	+	+	+
Control for use and protection of land	-	+	+	-	+	-	+	-	-	-
Land resources accounting	-	+	-	-	-	-	+	-	-	+
Analysis	-	+	+	+	+	+	+	+	+	+
Monitoring of land use and protection	-	+	+	-	+	-	+	-	-	-

Source: Completed by the authors with the use Khvesyk (Khvesyk et al., 2013), Verkhovna Rada of Ukraine (2001).

The Ministry of Ecology and Natural Resources of Ukraine is a principal body in the system of central bodies of executive power, which secures shaping and implementation of the state policy in environmental protection and ecological safety (Cabinet of Ministers of Ukraine, 2015b).

The State Ecological Inspection is a central body of executive power. Its activity is focused and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Ecology and Natural Resources, who implements the state policy as to governmental control in the field of environmental protection, rational use, reclamation and protection of natural resources, ecological and radiation safety (Cabinet of Ministers of Ukraine, 2017).

Figure 1. Institutional structure of land resources and land use management in Ukraine



— Direct coordination, management relation
 - - - Indirect coordination, management relation in the field of land cadastre and geodesy (control).

Sources: Completed by the authors with the use the legislation of Ukraine (Cabinet of Ministers of Ukraine, 2014a, 2014b, 2014c, 2014d, 2015a, 2015b, 2015c, 2017; Ministry for Regional Development, Construction and Public Housing and Utilities of Ukraine, 2015; Ministry of Ecology and Natural Resources of Ukraine, 2019; Verkhovna Rada of Ukraine, 1997, 1999, 2001, 2011a).

The State Agency of Water Resources of Ukraine is a central body of executive power. Its activity is focused on and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Ecology and Natural Resources, who implements the state policy in the field of development of water economies and hydro-technical melioration of land, management, use, and reclamation of surface water resources (President of Ukraine, 2011).

The State Agency of Ukraine for Management of the Exclusion Zone is a central body of executive power in the field of management of the exclusion zone and zone of obligatory resettlement, liquidation of the consequences of Chernobyl catastrophe, phasing out of the Chernobyl APS, and transformation of the object “Ukryttia” into an ecologically safe system (Cabinet of Ministers of Ukraine, 2014c).

The Ministry for Regional Development, Construction and Public Housing and Utilities of Ukraine is a principal body in the system of central bodies of executive power, which secures shaping and implementation of the state regional policy, state housing policy and policy in the field of construction, architecture, city planning,

public housing, and utilities. Also, it develops the state policy in the field of architectural-construction control, control in the field housing and utilities, in the field of efficient use of fuel and energy resources, energy supply, renewable sources of energy, and alternative kinds of fuel (Cabinet of Ministers of Ukraine, 2014a).

The State Architectural-Construction Inspection of Ukraine is a central body of executive power. Its activity is focused on and coordinated by the Cabinet of Ministers of Ukraine through the Vice-Premier of Ukraine, i.e., the Minister of Regional Development, Construction and Housing Utilities, who conducts the state policy on the issue of state architecture and construction control (Cabinet of Ministers of Ukraine, 2014b).

The Ministry of Agrarian Policy and Food of Ukraine is the main body in the system of central bodies of executive power, which secures shaping and enforcement of the state agrarian policy, state policy in the field of agriculture and food safety of the country, protection of the right for plant varieties, animal breeding, seed production, nursery gardening; shaping and implementation of the state policy in the field of fishing and fish industry, protection, use and reclamation of water biological resources, regulation of fishing and safety of marine navigation of fishing vessels, forest and hunting industry, veterinary medicine, safety and some indices of food quality, in the field of quarantine and plant protection, in the field of topographic-geodesic and cartographic activity, land relations, land organization, in the field of the State land cadaster, state control in agro-industrial complex in terms of keeping within the land laws, use and protection of land of all categories and forms of ownership, soil fertility; development of the state policy in the field of control in the system of engineering and technical support for agro-industrial complex (Cabinet of Ministers of Ukraine, 2015c).

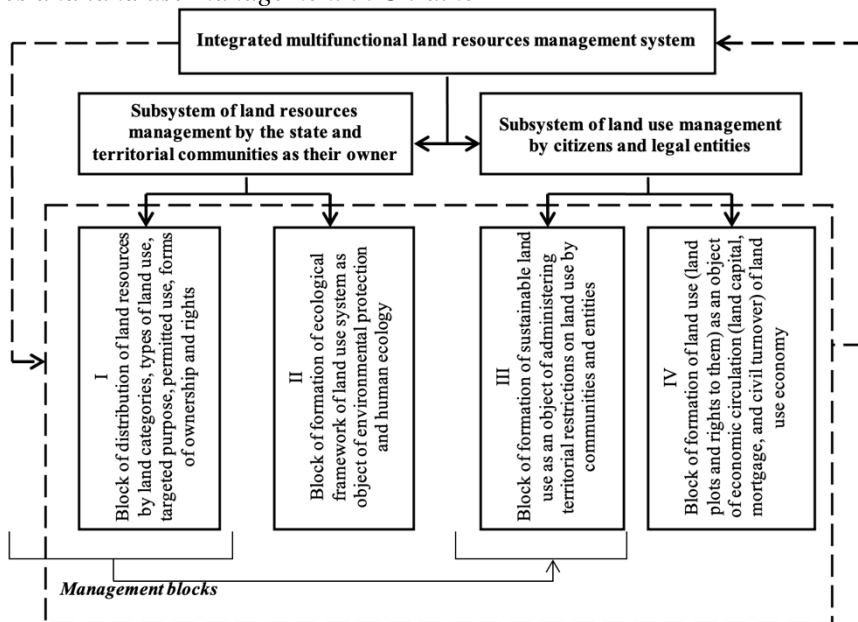
Currently, the State Service of Ukraine for Geodesy, Cartography and Cadastre, the State Agency of Forest Resources of Ukraine, the State Agency for Fisheries of Ukraine, and the State Service of Ukraine for Food Safety and Protection of Consumers are subordinated to the Ministry of Agrarian Policy and Food of Ukraine. The State Service of Ukraine for Geodesy, Cartography and Cadastre is a central body of executive power, which is directed and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Agrarian Policy and Food and implements the state policy in the field of topographic-geodesic and cartographic activity, land relations, land organization, in the field of the State land cadaster, state control in an agro-industrial complex in terms of keeping within the land laws, use and protection of lands of all categories and forms of ownership, soil fertility (Cabinet of Ministers of Ukraine, 2015a).

The State Agency of Forest Resources of Ukraine is a central body of executive power, which is regulated and coordinated by the Cabinet of Ministers of Ukraine through the Minister of Agrarian Policy and Food and implements the national policy in the field of forest and hunting industry (Cabinet of Ministers of Ukraine. 2014d).

The State Property Fund of Ukraine is a central body of executive power with the specific status, which implements the national policy in the field of privatization, lease, use and purchase of state property, administration of the objects of state property, including corporative rights of the state for the objects of state property, which belong to the sphere of its authority. It also belongs to the field of state regulation of property assessment, property rights, and professional assessment activity (Verkhovna Rada of Ukraine, 2011a).

The presented description of authorities and responsibilities of most of the bodies of power and local government or their affiliates regarding the management of land resources and land use (See Figure 1) speaks for a considerable differentiation and scattering of managerial functions among numerous state institutions. However, the most significant problem is the lack of well-organized coordination of executive actions and control for the adequate performance of authorities and responsibilities, keeping within the institutional frames, and making relevant managerial decisions about land and land use.

Figure 2. Logical and semantic model of a complex multifunctional system of land resources and land use management in Ukraine



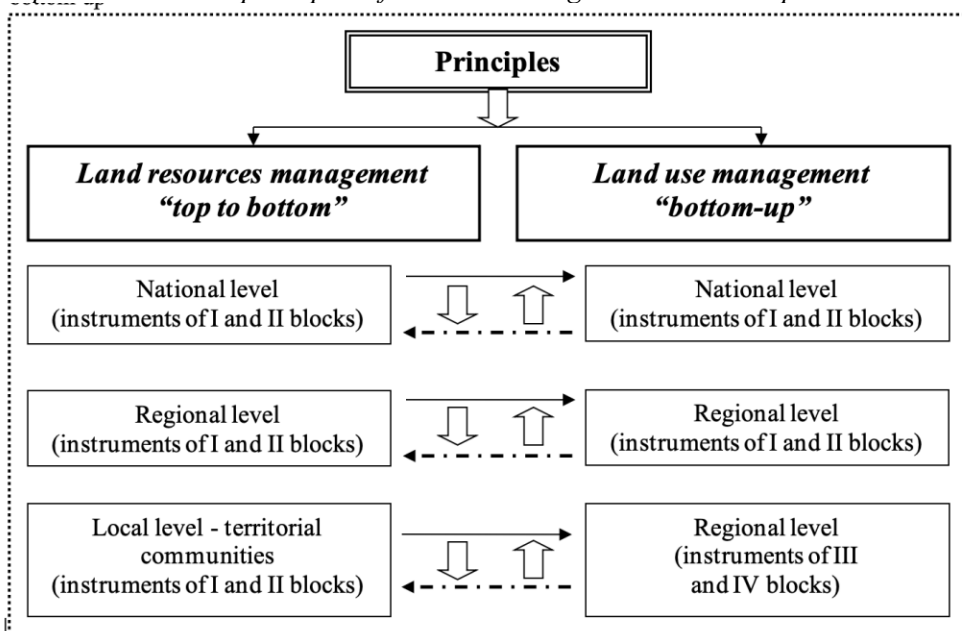
Sources: Own elaboration.

Under the management of land resources and land use, it is necessary to understand the purposeful influence of owners (state, territorial communities, citizens, and legal entities) directly or indirectly on the process, forms, and methods of organizing the most efficient use of land resources, depending on the type and method usage of land. In this regard, considering the provisions of the state land policy defined in the Land Code of Ukraine (Verkhovna Rada of Ukraine, 2001) and the Law of Ukraine About

the State Land Cadastre (Verkhovna Rada of Ukraine, 2011b) in Ukraine, a model of a comprehensive multifunctional system of land resources management and land use should be introduced, which will balance the interests of all stakeholders in a combination of two mutually directed control processes (Figure 2).

The formation of such a model of a complex multifunctional system of land resources and land use management in Ukraine is due to the decentralization of the management system as a whole, and the relevant principles of land resources management “top to bottom” and principles of land use management “bottom-up” should be applied (Figure 3).

Figure 3. Logical and semantic scheme of principles of land resources management “top to bottom” and principles of land use management “bottom-up”



—————▶ administration of territorial distribution of land resources, formation of ecological network, territorial restrictions in the use of land and other natural resources, etc. and reconciliation of interests

- - - - ▶ administration of sustainable land use, territorial restrictions of land use, formation of land plots and their circulation and reconciliation of interests

Sources: Own elaboration.

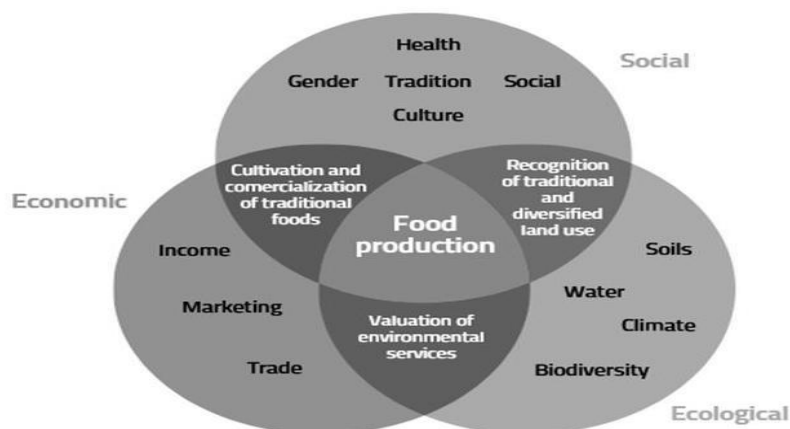
Changing the land resources system and land use management in Ukraine requires appropriate improvement of the institutional environment, both at the legislative and regulatory levels, and functionally for different hierarchical levels, especially for the territorial communities. Also, climate change and the rapidly growing demand for food are increasing the burden on the land. Significant changes are needed to overcome current development trends and move to a sustainable agriculture and food

production model. FAO (2017) identified five interconnected principles for this transit: Improving resource efficiency;

- Conservation of natural resources;
- Improving living conditions in rural areas;
- Increase of stability;
- Increase of controllability.

Therefore, FAO recognizes that sustainable use and management of land resources are essential to achieving Sustainable Development Goal 2 - producers and managers in natural resources adopt practices that increase and improve the supply of products and services in agricultural production in a sustainable manner. Implementation of the five principles of transit to sustainable agriculture and food production and integration of three sustainable development strands - social, economic, and environmental (Figure 4) - requires a new approach to land resources and land use management at different levels competing destinations land use.

Figure 4. *The three dimensions of sustainability*



Sources: FAO, 2017.

However, despite some progress in inland cadastre automation in Ukraine, the creation of a database on land and communication instruments, we must admit that the level of development of land management and land use is insufficient to cope with new challenges, increasing demand, and pressure on land, as well as water resources. We doubt that decision-makers at various levels do not implement adequate land-use planning and relationship analysis instruments and other natural resources to develop scenarios, compare their strengths and weaknesses, and find a win-win solution for all parties. The availability of such instruments, knowledge, and practical experience is critical to the further development of land resources and land use management and the sufficient resolution of conflicts around land and other natural resources, mostly water, at local, regional, and national levels, as well as to improve resource management at all levels.

Land use planning is a fundamental management function. As stated (FAO, 2017), land use planning is a systematic assessment of the potential of land and the analysis of alternatives to determine the best option for their use and improvement of public welfare based on joint participation of representatives of economic sectors, other stakeholders, and depending on the spatial scale.

The purpose of land use planning is to provide informational support to decision-makers and land users in the choice and practical implementation of land use, which is best suited to the conservation of land and other natural resources and ecosystem services for present and future generations. Land use planning in today's challenges covers land suitability assessment and the value of other natural resources and land use planning and is designed to address biophysical and socioeconomic challenges through a negotiated process involving all stakeholders. The interrelationships between humans and biophysical processes and the impact of land use and management practices on ecosystems' condition and sustainability are complex, multilevel, and time-dependent phenomena. An increasingly severe challenge is reconciling the interests of individual land users and urban and rural populations, as well as society, through demographic, migration, and economic processes, which leads to the introduction of a model of a comprehensive multifunctional system of land resources and land use management in Ukraine.

Modern approaches to land use planning by zoning land for their suitability and value of other natural resources at the local level not only determine the types (subtypes) of land use (Tretiak *et al.*, 2019) but also provide decision-makers with land use management scenarios that contribute to improving the productivity and sustainability of land and other natural resources. The attention given to natural resources and ecosystems in land zoning contributes to the identification and implementation of the most suitable and sustainable production systems in the present and future. Another problem is that the value of land depends to a lesser extent on its quality than on the characteristics of specific types (subtypes) of land use (Tretiak *et al.*, 2019), applied by stakeholders and often determined by socioeconomic factors as opposed to environmental (including ecosystem services provided by land resources). Therefore, land use planning at the local level is a valuable tool for drawing up economically, socially, and environmentally sound alternative scenarios to achieve the goals of land users and other natural resources and provide consensus among stakeholders in the decision-making process.

The national strategic planning system and the basis for economic policy implementation, and a modern platform for combining society's interests can become the governing instrument for implementing this mechanism. Strategic planning for regional development should provide coordination and coherence of strategic and planning documents of central and regional authorities, their compliance with budget indicators of all levels, and monitoring the implementation of these documents (Kovalenko, 2018).

Provision of economic growth and overcoming crisis phenomena are possible under the condition of integrated and coordinated activity of all state bodies. To this end, it is proposed to set up a Strategic Planning Council for Ukraine. Long-term strategic planning documents should be the basis for developing state target programs, plans, and programs of economic entities and the functioning of public-private partnership mechanisms.

It is advisable to strengthen the territorial dimension of environmental planning by including relevant indicators in the plans. Possible sources of financing for the implementation of the sustainable development strategy based on environmental modernization are: target budgetary funds; temporarily free environmental insurance funds; revenues from privatization taking into account the environmental factor; the use of the mortgage value of natural resources based on their rent estimates; encouraging investors to use waste; preventing the shadow economy; revenues from the sale of licenses and environmental services; grants from environmental funds of international communities. Plans and programs in an integrated strategic planning process should contribute to the implementation of a model of an effective economic mechanism for nature resources (land resources) use and environmental protection activities based on sustainable development.

4. Conclusions

Analysis of the current institutional structure of land resources and land use management concludes that, at the present stage of institutional transformations in Ukraine, the structure of management of land resources and land use is of multi-level and complicated nature. It is not entirely arranged and is characterized by the fragmentary character of distribution of the authorities and responsibilities concerning the performance of the system of managerial functions, i.e., forecasting and planning of land use, assessment of the resource, organization of use, and protection of land, accounting of land resources, analysis and monitoring of use and protection of land.

In total, the legally set tasks of power bodies as to land and land use can be considered to cover all functions of management (so-called "umbrella" of management). In contrast, in terms of each managerial function, it is characterized by non-system structure, lack of vertical and horizontal cause and effect relation, and separation from the managerial situation at a local level, forcing a conflict of interests of the management subjects.

Considering legally set authorities of local government, one can say that, from the economic position, all functions of the management of land resources and land use are concerned. However, such management's ecological and social aspects do not correlate with the authorities, capabilities, and responsibilities. The relation with the efficiency of exercising the functions of the management of land resources and land use by state institutions at the local government level is assessed as a low one.

At all levels of the institutional structure of land resources and land use management in Ukraine, the measures concerning the performance of the management of land resources and land use are differentiated illogically, and there is no functional multi-level relation between "bottom-up" and "top to bottom." Thus, one can state the fact of institutional deformation in the land policy of Ukraine.

In that context, the authors of the article consider that one of the critical factors for change of such situation under conditions of power decentralization expects differentiation of authorities and effective institutional environment for management of land resources and land use at all levels, the establishment of a simple managerial vertical and horizontal of institutions, adequate space organization of the territory, securing efficient relation "bottom-up" and "top to bottom" of the decisions, and actions of all institutes and structures of the land policy, including bodies of executive power with local government, with separate land-owners and land-users. The logical and structural integrity of the institutional structure of land resources and land use management will contribute to social well-being and sustainable development, liquidation of local and global ecological hazards.

Ukraine needs to initiate the development and implementation of territorial sustainable environmental strategies that define comprehensive measures for nature conservation, pollution prevention and environmental degradation, and the effective use of natural resources and ecosystems in the national economy.

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