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Original paper

Foresight-forecasting in the system of recreational land management

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Abstract: The study is devoted to the study of strategic vectors for the development of recreational lands. It is proved that in the current state of the recreational lands of the EU countries there are certain obstacles on the way to the sustainable development of the respective territories. The recreational sphere is deprived of the possibility of balanced development due to the problems of inefficient use of the lands of the respective territories. These lands cannot provide both the need for recreation and the necessary protection and restoration of the environment due to the negative anthropogenic impact. The author's definition of the term "land strategizing" is given. The components, functions, subjects and the effect of the implementation of the strategy of recreational territories are determined. The proposals for the implementation of the land strategy process using the methodology of foresight forecasting of recreational land use have been developed. The scientifically grounded stages of Foresight forecasting and methods of their implementation from the set of Foresight forecasting methodology are proposed. The logical-structural scheme of land planning for recreational territories based on the foresight methodology is presented. Also the procedure for the foresight methodology implementation in the direction of sustainable management of recreational land use is proposed.

Keywords: foresight, SMART-method, STEEPLE-analysis, recreational land use, the strategy of ecologization

1. Introduction

The complex of contradictions, which are formed in the process of land development by the society covers the interaction of opposites, which are naturally existing between economic entities, whose activities are aimed at changing natural resources as instruments

of targeted social action. Industrial activity pollutes air, water and soil. As a result, products become unsuitable for consumption. The value of land as a human habitat, a source of food and recreational services is significantly increased. Therefore, now is the time when effective land usage becomes more and more crucial for all humankind.

The strategy of ecologization of the development of territories is to identify the negative factors on a particular natural-geographical and socio-economic territory and search for ways to overcome it rationally. The modern interconnection between the ecological, social and economic components of land use development is characterized by extremely rapid dynamics and volatility. Therefore, there is a need to find acceptable coexistence of organizational, ecological and economic factors in the system of land use, and especially for recreational territories. After all, these factors provide simultaneous economic (increased reproduction of the labour force, increase of labour productivity, increase of the working time fund, profit from commercial activity in the respective territories), environmental (environmental protection) and social (reduction of morbidity, increase in the life expectancy of people) functions.

The strategic direction for a balanced development of the respective territories is to ensure the coordinated existence, functioning and development of relevant norms, regulations, standards and instructions on the use of recreational lands at the European level. After all, the recreational sphere is not national but an international sphere, considering tourism and economic development of society. The existing state of the resort and recreation industry in many European Union countries (by scale and structure) does not meet the current requirements of optimal and efficient functioning. The depreciation of fixed assets, outdated material and technical base, seasonality of recreational flows, high cost of recreational product lead to the seasonal nature of work and incomplete use of objects in this area. The recreational sphere is deprived of the possibility of balanced development due to problems of inefficient and ineffective use of the respective territories:

- unregulated anthropogenic and recreational pressure on territories;
- improper use of recreational areas;
- the uncoordinated construction process, which leads to unacceptable pressure on the land and improper control over the use of land resources.

The above-mentioned visible signs indicate the need for a radical restructuring of the organizational and economic mechanisms for the development of recreational territories. The most promising direction of ensuring the balanced development of the land is ecologization of the economy. The transition to ecologization of the economy can increase the inputs of natural, physical and human capital. We are talking about increasing the productivity of land resources through better management of natural capital, improving the quality of human potential by improving the health and morbidity of the population as a result of improving the environment, increasing the number and quality of recreation areas, and finally reducing economic losses from physical losses of the capital. Consequently, the theoretical and methodological processes of recreational land use, related to the need for balanced, sustainable development, should be considered in the context of ecologization of the economy.

Development of recreational land use in the countries of the European Union is an integrated direction for ensuring the rational development of territories, which now occurs

without common standards agreed upon for all countries. Consideration of the extensive trends of the existence of recreational territories, justification and formation of innovative ways of improving their use is a key to sustainable development and ecologization of the territories. The paper aims to determine the preconditions and justification of ways to ensure the sustainable management of recreational land use of the European Union countries.

2. Materials and methods

The methodological basis of the research is the system of classical positions of economic theory, the economics of nature use and environmental protection, economic laws, concepts and categories of land use economics, including scientific works of domestic and foreign scientists on the definition of organizational and economic foundations for the rationalization of recreational land use.

In the course of scientific research, the following methods were used to achieve the purpose:

- induction and deduction – to substantiate theoretical and methodological provisions of the study, conclusions and recommendations;
- economic-statistical and graph-analytical methods – for processing and generalization of statistical data and conducting diagnostics;
- logical synthesis, synthesis, analysis and comparison – to determine the essence, principles, functions and mechanism of ecologization of economic relations of recreational land use.

The features of modern recreational land use are based on:

- land relations as relations with the leading national wealth, which is subject to precise regulation;
- multipurpose of land use;
- a contradiction in the interaction of social, economic and environmental spheres of administrative-territorial entities different in status and size;
- multifunctionality of the suburban area adjacent to cities;
- evolution and unevenness of the development of urbanization processes;
- the complexity of the land organization of the city and the suburban area;
- differences of modern objective economic processes and specific features of the economy of the European Union countries (Bulysheva, 2017).

The complete harmonization of the above features can be made in the process of ecologization. It is conditioned by the need to adequately reflect the real socio-economic processes which are taking place in the recreational territories. For this purpose, it is crucial to analyze the basics of recreational land use in the system of the spatial development of territories. We understand diagnostic analysis of recreational land use as an analytical component of the process of a comprehensive and systematic study of organizational and economic tools for ecologization of recreational land use, features and problems of its development based on defining the principles, methods and indicators for its improvement. The data of the statistical service of the European Union were analyzed (Table 1).

Table 1. Dynamics of quantitative changes of recreational territories in EU countries

	2009			2012			2018		
	Total [km^2]	Recreation, leisure, sport [km^2]	% of the total	Total [km^2]	Recreation, leisure, sport [km^2]	% of the total	Total [km^2]	Recreation, leisure, sport [km^2]	% of the total
Belgium	30 668	795	2.59	30 668	466	1.52	30 668	521	1.69
Republic of Bulgaria	110 995	–	–	110 995	393	0.35	110 995	403	0.36
Czech Republic	78 874	1 213	1.54	78 874	1 103	1.40	78 874	978	1.23
Denmark	43 162	2 003	4.64	43 162	1 728	4.00	43 162	1 615	3.72
Germany	358 327	11 259	3.14	358 327	10 529	2.94	358 327	11 103	3.10
Estonia	45 347	2 413	5.32	45 347	945	2.08	45 347	749	1.65
Ireland	70 601	1 559	2.21	70 601	893	1.26	70 601	736	1.04
Greece	131 912	740	0.56	131 912	1 044	0.79	131 912	1 224	0.93
Spain	498 504	1 982	0.40	498 504	2 046	0.41	498 504	1 995	0.40
France	549 060	7 810	1.42	549 060	6 782	1.24	549 060	7 172	1.31
Croatia	56 539	–	–	56 539	–	–	56 539	221	0.39
Italy	301 291	2 887	0.96	301 291	2 831	0.94	301 291	3 211	1.07
Cyprus	9 249	–	–	9 249	33	0.36	9 249	58	0.63
Latvia	65 519	1 154	1.76	65 519	1 405	2.14	65 519	1 304	1.99
Lithuania	65 412	1 120	1.71	65 412	979	1.50	65 412	960	1.47
Luxembourg	2 595	116	4.47	2 595	78	3.01	2 595	72	2.77
Hungary	93 013	1 656	1.78	93 013	1 881	2.02	93 013	1 336	1.44
Malta	315	–	–	315	9	2.86	315	16	5.08
Netherlands	37 824	3 766	9.96	37 824	3 452	9.13	37 824	3 683	9.74
Austria	83 944	1 505	1.79	83 944	1 122	1.34	83 994	1 296	1.54
Poland	313 851	4 137	1.32	313 851	3 849	1.23	313 851	4 730	1.51
Portugal	88 847	408	0.46	88 847	206	0.23	88 847	268	0.30
Romania	239 068	–	–	239 068	309	0.13	239 068	470	0.20
Slovenia	20 277	487	2.40	20 277	487	2.40	20 277	371	1.83
Slovakia	49 026	932	1.90	49 026	586	1.20	49 026	516	1.05
Finland	337 547	16 943	5.02	337 547	24 359	7.22	337 547	32 732	9.70
Sweden	449 896	21 735	4.83	449 896	48 078	10.69	449 896	42 814	9.52
United Kingdom	247 763	8 853	3.57	247 763	7 009	2.83	247 763	6 771	2.73
European Union (28 countries)	–	–	–	–	–	–	4 369 364	127 325	2.91
European Union (27 countries)	–	–	–	4 312 826	122 602	2.84	4 312 826	127 103	2.95
European Union (aggregate changing according to the context)	3 953 898	95 472	2.41	3 953 898	121 859	3.08	3 953 898	126 156	3.19

"–" – not available according to Eurostat (Eurostat, 2018)

It can be affirmed that the average level of the recreational territories is about 3%, which does not satisfy the needs of the population and tourists. In many countries, such as Belgium, Bulgaria, Czech Republic, Denmark, Germany, Cyprus, Austria, the official statistical sources till 2018 did not have any information on the state of the concerned land. At the same time, they are centres for providing tourist and sports services and these territories need to be taken into account.

At the same time, the recreational functions, partially related to land with different purposes. These include forests and other forestry areas, perennial plantations, hayfields, pastures, mixed land, lands with special plant cover, and areas covered with surface waters. The low-anthropogenic and ecologically stable lands have significant recreational potential.

The data of analytical observations indicate that the percentage of recreational areas approaching 10% is observed only in 3 countries – Sweden, Finland and the Netherlands. The relevant indicator exceeds the average by the countries of the European Union (3.19%) only in 6 countries (Fig. 1). The above indicates a low quantitative condition of recreational territories. The relevant territories cannot provide the need for recreation and the necessary protection and restoration of the environment due to negative human-made impact.

Thus there is a need for a qualitatively new approach of transition to an innovative strategy of recreational land use as a priority area. Unlike planning the strategy is a single technological complex and a continuous process of constructing a development strategy that includes:

- defining goals;
- assessing the environment;
- choosing the ways to implement a strategy;
- constructing strategic maps monitoring etc.;
- determining the economic basis which should be created on the territory to form a full-fledged regional strategy.

The author's definition and the basic principles of the land strategy of recreational territories are shown in Fig. 2. In our opinion the use of foresight methodology is the most relevant for the development of the innovative strategy of recreational land use. The main reasons for applying foresight methodology are:

- the need for more detailed and accurate forecasting of the regional development prospects in cooperation with the interests of the participants in the process and therefore improvement of the decision-making process;
- the need to create a network of parties active in developing the future of the economic system and who are potential participants (authorities business population tourists migrants);
- the need to create alternative directions for future development;
- the need to revitalize the existing reserves of the entity with the motivation of the changes etc.

The researchers in the field of international theory and practice of foresight using offer several definitions concerning the essence of this technique.

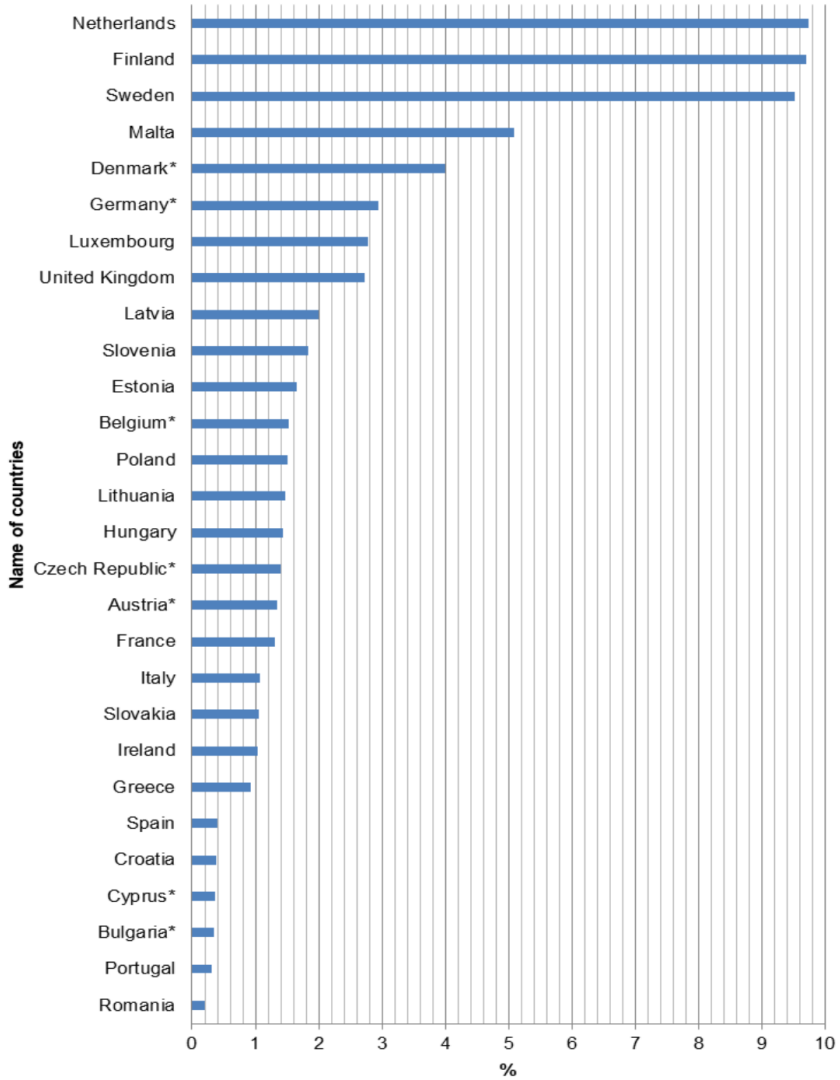

Fig. 1. Quantity of recreational territories in EU countries. Data according to the previous year of analysis. Made by authors according to (Eurostat, 2018)

The American economist Professor Ben Martin offers the classic definition of foresight as "systematic attempts to look into the long-term future of science technology economics and society to foresee strategic areas of research and the emergence of basic technologies the application of which can give significant economic and social benefits" (Irvine and Martin, 1984). Georghiou (2003) believes that Foresight is "mean of systematic assessment of those areas of science and technology development that can have a strong influence on the competitiveness of companies creation of wealth and quality of life".

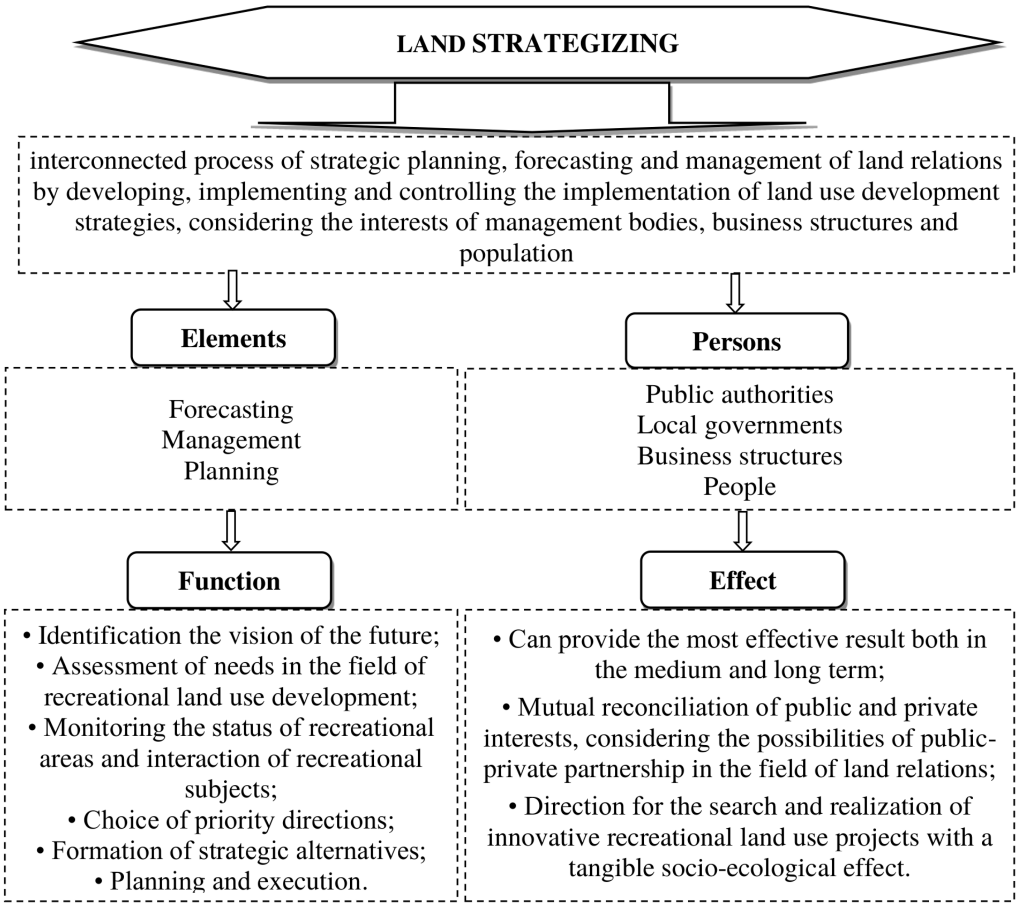

Fig. 2. Logical-structural scheme of land planning for recreational territories based on the foresight methodology

Other scientists understand foresight as "the process of active knowledge of the future and the creation of a medium and long-term perspective systematic study of the future of science economics and society to support the adoption of relevant decisions and mobilize joint efforts to implement them" (Weber, 1968). Professor L. Gokhberg editor in chief of information and analytical journal "Foresight" gives the following definition: "Foresight is a system of expert assessment methods for long-term prospects for innovation development the discovery of technological breakthroughs that can positively affect the economy and society" (Gokhberg et al., 2016).

The United Nations Industrial Development Organization – UNIDO in its documents provides the following definition: "Foresight is a system of expert assessment methods for strategic areas of socio-economic and innovation development the discovery of technological breakthroughs that can affect the economy and society in the short and long term" (United Nations Industrial Development Organization, 2005).

The technological areas of possible effective breakthroughs can be identified with the help of foresight. Considering the differences and practice of application one can distinguish several key features inherent in foresight technologies:

1. Foresight focuses on identifying prospects for future development potential opportunities and challenges;
2. Foresight brings together key policymakers to develop strategic documents and explore prospects;
3. Foresight is aimed at "action" i.e. on the implementation of concrete actions today;
4. Foresight is based on interactive methods and models of future research;
5. Foresight as opposed to forecasting is an active process that can lead to the development of existing activities subjected to implementation at the moment;
6. Foresight predicts the possible damage from a distance based on the prediction of technologies to predict market opportunities and generate revenue from the use of new technologies.

Foresight is a more comprehensive approach than traditional forecasting. Traditional forecasting as a rule is formed by a limited range of expert scholars – narrow specialists in a particular field of activity. Foresight also attracts all key players in the development: science business government and the public; develops cooperation between business government and academics. Foresight promotes cooperation between the state business students and public. It develops the ability and culture of anticipation in society. This methodology provides the possibility of choosing an action depending on the "visibility" of the future. It contains elements of active influence on the future.

Foresight includes several approaches that combine three components:

– vision of the future (forecasting prospects foresight);
– planning (strategic analysis prioritization);
– networks (communication expert evaluation).

The choice of foresight-research methods is influenced by several factors:

– availability of resources (time and money);
– the results which should be achieved;
– the sponsor benefits;
– the nature of the subject areas considered;
– the target groups.

The set of approaches used in foresight is constantly expanding and includes a lot of different methods:

– qualitative (interviews morphological analysis literature reviews "goal tree" script method role-playing etc.);
– quantitative (extrapolation method analysis and forecast of indicators of methods modelling etc.);
– synthetic character (road mapping Delphi method critical technologies game simulation patent analysis etc.).

Popper (2012) proposed to visualize a system of methods in the form of foresight-rhombus. In its corners there is four foresight forecasting methodological provisions that determine the ability to collect and process information based on expertise creativity interaction and evidence. At present the total number of methods is 44. The sources of

information based on creativity experience interaction or factual data represent a universal knowledge system that provides a complete picture of the future and possible scenarios for its development.

Methods that tend to creativity require original thinking and imagination. In most cases they are used by talented experts including prose genius retropolation essay. The methods based on experience are based on the use of knowledge and skills of specialists in different fields. Usually they are used to support the decision-making process at the highest level advise and prepare recommendations. Typical examples are expert panels and the Delphi method. Interaction methods are used in foresight research to find and disclose information in the process of discussion and to ensure legitimacy by engaging all stakeholders in the decision-making process without relying solely on factual data and peer-reviewed assessments. The methods based on factual data are intended to explain and (or) predict a phenomenon by analyzing reliable and documented information. They are especially useful for studying the real state of some regions of scientific and technological development (Popper, 2012).

3. Results

Thus we can state the feasibility of using foresight as a key method of land strategy because:

- it can provide the most effective result both in the medium and long term time framework;
- it is based on the opportunities of public-private partnership in the field of land relations;
- it is aimed at finding and implementing innovative projects of recreational land use with a significant socio-economic and environmental effect.

The above-mentioned confirms the relevance of the foresight methodology implementation in the economic and ecological mechanism of the development of recreational territories. The primary condition for successful use of foresight is the application of methods that ensure the efficient work of the involved experts. Any foresight program requires a combination of methods of use and attractive sources of information. The problem of choosing the most effective foresight group is always relevant.

Therefore a scenario in the framework of the target purpose formation for ensuring the strategy of recreational land use in the direction of ecologization is proposed. It is combining foresight research methods considering the appropriateness of using different methods based on creativity experience interaction and factual data (Table 2).

There is a need to analyze in detail the tools suggested by the author as the most suitable for determining the effectiveness of ecologization of recreational land use based on foresight research (Fig. 3).

1) We suggest using the SMART method (Project Smart: Management Review, 2016) in the process of foresight forecasting. In the practice of innovation management there are so-called SMART-criteria which must meet the objectives: specific; measurable; achievable; relevant; correlated with specific time frames (Table 3). In 1981 John

Table 2. The procedure for the foresight methodology implementation in the direction of sustainable management of recreational land use

Phase	Phase Tools	Essence and Objectives
1. Identifying the vision of the future	Delphi method; trend extrapolation; simulation; expert panels; bibliographic analysis; SMART method (suggested by authors)	Achieving maximum consensus in determining the correct vector for the development of recreational land use since achieving the goal depends on its formulation
2. Assessment of needs in the field of recreational land use development	Interviewing/questioning; stakeholder analysis; method of critical/key technologies; mapping technologies; literary reviews; analysis of mutual influence; critical technologies; conferences/seminars	Determination of target indicators for the use of recreational areas considering the interests and needs of stakeholders
3. Monitoring the status of recreational areas	PEST-analysis; STEP-analysis; STEEPLE-analysis; GIS-analysis	Environmental analysis of the external environment of recreational land use
4. Selection of priority directions	SWOT-analysis; brainstorming development; analysis of mutual influences; expert panels; method of relevance tree	A visual representation of the prospects for the development of recreational territories linking the foundations of the socio-ecological and economic development of the corresponding lands
5. Formation of strategic alternatives	Strategizing	An interconnected process of strategic planning forecasting and land management through the development implementation and control of land use development strategies considering the interests of government bodies business structures and the population
6. Planning and execution	Road maps; mapping of stakeholders; development of scenarios (strategies)	The graphical presentation of a step-by-step scenario for the development of recreational territories focused on choosing the most desirable of them. Assessment of the economic and social consequences of the emergence and implementation of innovative measures for the development of recreational land use

Doran developed the concept of smart goals: “There’s a S.M.A.R.T. way to write management’s goals and objectives”. A current concept is a modern approach to goal setting in the system of public-private partnerships in the field of recreational land use. S.M.A.R.T. system is aimed at summarizing all available information setting acceptable terms for the implementation of innovative and investment projects determining the adequacy of recreational and financial resources and providing all public-private partners with clear precise and specific goals (Savchuk, 2018). In the process of using the appropriate methodology in the practice of recreational land use we have proven the rele-

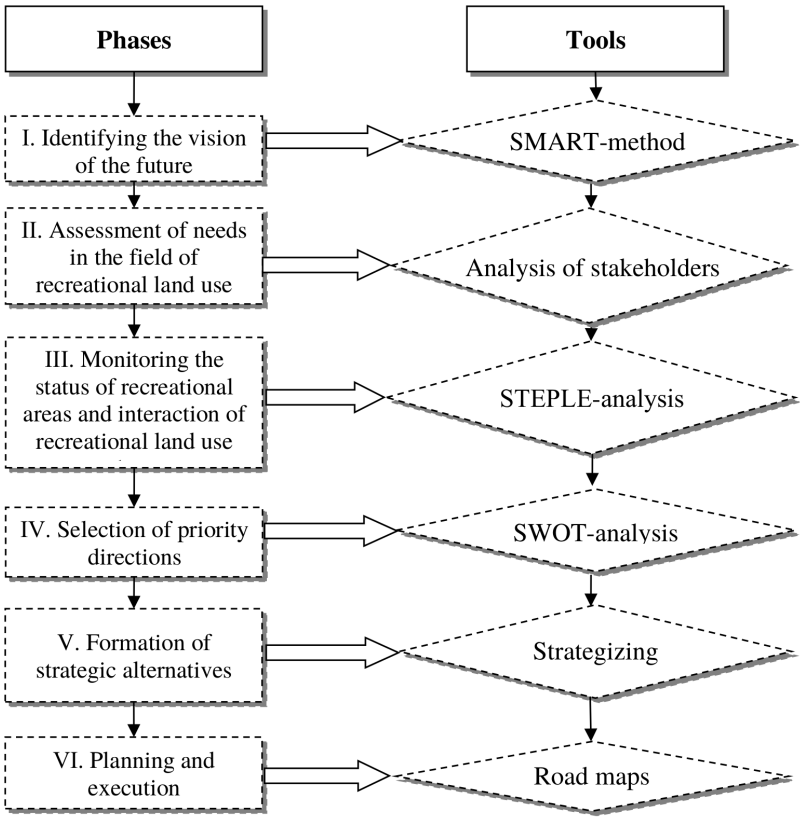

Fig. 3. The flowchart of the ecologization efficiency determining for recreational land use based on foresight research

vance of a partnership between the public and private sectors (participants in recreational land use).

The urgency of implementing the principles of state-private partnership in the sphere of recreational land use is due to:

- the need to expand the recreational areas as a result of an increase in the range of services related to the recreation of people and the renewal of the vitality of city residents after a working day;
- an increase in the volume of recreational services through the acceleration of urbanization processes;
- a complication of production and economic activities of urban agglomerations; the priority of meeting the recreational cultural entertainment and recreational needs of the population in the urban agglomeration;
- growth of population concentration and simultaneous limitation of land resources; the urgency of solving socio-demographic problems;
- the need to improve the living standards through the systematic implementation of recreational services.

Table 3. Justification feasibility of public-private partnership implementation in the direction of recreational reclamation based on a SMART method

Letter	Mean	Explanation	Justification feasibility of public-private partnership implementation in the direction of recreational reclamation	
			Private entrepreneurship	State
S	Specific significant stretching	The goal should be as specific and clear as possible. Clear perception determines the degree of its "transparency"	The goal is to get the maximum profit from the use of disturbed land with the least investment	The goal is ecologization and rational use of disturbed lands
M	Measurable meaningful motivational	The purpose should be measurable and the criteria of measurement should be not only for the final result but also for the intermediate	In the process of achieving the goal business entities receive new recreation areas for employees as a result – commercial profit from the use of territories	The number of disturbed territories will decrease the number of recreational lands will increase and the use of the corresponding territories will balance tax revenues
A	Attainable agreed upon achievable acceptable action-oriented	It is necessary to adequately assess the situation and understand that the goal is achievable in terms of external and internal resources (which are in ownership of organization)	Achievement of mutually agreed goals is possible only within the framework of public-private partnership: the state establishes the objectives of projects from the standpoint of the public interest and defines quantitative and qualitative parameters carries out environmental monitoring of project implementation and the private partner takes on it operational activities at different stages of the project – development financing construction operation management practical implementation of services to consumers	
R	Realistic relevant reasonable rewarding result-oriented	The goal should be realistic and relevant in the given situation correspond to it and not upset the balance with other goals and priorities	As a result of achieving the goal private entrepreneurs receive more income with less investment than the result of agricultural reclamation	As a result of achieving the goal the state receives higher tax revenues rational land use an increase in the quantitative and qualitative composition of recreational lands
T	Time-based timely tangible trackable	The term is one of the main components of the goal. It can have either a fixed date or a specific period	The long-term relationship of the public-private partnership – from 5 to 50 years	

A relevant concept is a modern approach to setting goals in the system of public-private partnership in the field of recreational land use. The SMART goals allow (at the stage of goal setting) to summarize all available information set acceptable terms for the implementation of innovative and investment projects determine the adequacy of recreational and financial resources and provide all public-private partnerships with clear precise specific tasks.

Public-private partnership is a tool for attracting investment and innovation in the public sector of the economy in this case directly in the process of using recreational lands. It provides for the use of private capital of entrepreneurs for a certain period based on public administration without the privatization of objects while part of the risks relies on private investors. The state establishes the objectives of the projects from the standpoint of the public interest and determines the cost and quality parameters monitors the implementation of the projects and the private partner undertakes operational activities at different stages of the project - development financing construction operation management and practical implementation of services to consumers.

2) We proposed using the stakeholder analysis method when assessing the need for the development of recreational land use. Implementation of European experience in Ukrainian realities involves a comprehensive system of economic activity of stakeholders in the system of urban recreational land use. At the EU level the dialogue with the stakeholders is institutionalized. The European Commission initiated this process within the framework of the European Union. In 2003 this organization announced the establishment of a Stakeholders Forum the primary purpose of which was to raise awareness of the concept of corporate social and environmental responsibility to promote dialogue between business government agencies civil society organizations trade unions and other stakeholder groups. The main "push" for the Forum was the Lisabon conference which took place in 2000.

For the first time the concept of "stakeholders" was used in 1963 at the Stanford Research Institute. Later this theory was developed by Edward Freeman (Wikipedia, 2018). The EU Green Paper states that all stakeholders should be heard. According to the international standard of social responsibility ISO 26000 a "stakeholder" or an interested party is a person or group of individuals who is interested in any decisions or actions of an organization. Involvement of stakeholders is an activity to create opportunities for dialogue between the company and one or more of its stakeholders to provide an information base for company decisions (Kramarenko, 2012). Major stakeholder groups for companies are shown in Table 4. The efficiency of the stakeholder work is primarily related to the implementation of a balanced innovation and strategic investment policy of stakeholders for the sustainable development of urban recreational land use.

Table 4. Major groups of stakeholders

Workers and their consortiums	Clients and consumers	Public bodies
Shareholders investors rating agencies	Financial association	Government professional organizations public and international organizations
Investors	National and local public	Civil society
Non-governmental organizations and associations	Providers	Media training agencies consulting companies

3) At the stage of monitoring the state of recreational territories and interaction of recreational land use subjects the use of GIS-analysis is proposed. GIS are automated

systems the aim of which are collection storage integration analysis and graphical interpretation of spatial-temporal data as well as associated attributive information about the objects presented in the GIS. So they can become the cartographic base of recreational lands' development. GIS is a modern computer technology for mapping and analyzing objects of the real world including recreational territories as well as this system contains all statistical information (in the form of attribute tables) which can become the basis for planning and forecasting the rational use of territories. GIS applications have specialized spatial analysis tools for feature statistics or for geoprocessing which can significantly improve and speed up the process of monitoring the state of recreational areas in real time.

In the condition of uncertainty or insufficiency of cartographic base STEEPLE analysis can be proposed. In this analysis important factors and environmental phenomena are divided into six categories: social technological economic political legal and environmental. The main provisions of the PEST and STEEPLE analysis are that the strategic analysis of each component should be systemic since all these components are closely interconnected and cannot be relied solely on these environmental factors because the interaction of recreational land use with the environment is much more significant (Andryeyeva and Bulysheva, 2016). Conducting a STEEPLE analysis of factors affecting the use of recreational land can identify potential opportunities and risks that can then be used in a SWOT analysis.

4) In the process of choosing the priority areas the use of SWOT-analysis is considered to be relevant. It is widely used in the process of strategic planning which aim is to divide factors and phenomena into four categories: strengths and weaknesses of the project opportunities that open up in its implementation and threats which are connected with its implementation. The traditional method of SWOT-analysis in recreational land-use allows us to conduct a detailed study of the external and internal environment of recreation in the system of nature use. The result of a rational SWOT analysis which is aimed at generating information potential concerning the respective territories should be effective decisions regarding the appropriate reaction (influence) of the subject (weak medium and strong) to the signal (weak medium or strong) of the external environment.

5) In the process of formation of strategic alternatives it is relevant to develop a strategy for recreational land use. Development of recreational land use is foreseen in 3 alternative areas subject to the full partial periodic implementation of the strategy. Therefore the use of three alternative strategies: innovative intensive extensive is proposed.

The innovative strategy is a strategy based on the constant introduction by the stakeholders of innovative directions of ecologization of recreational land use considering the latest trends improvement of institutional basis implementation of recreational reclamation on disturbed lands to achieve balanced use of the corresponding lands based on public-private partnership active informational and communicative policy the involvement of stakeholders to the process of ecologization of recreational land use.

A comprehensive strategy is a strategy based on the development of recreational land use by increasing the area of the territories without taking into account their qualitative state execution of existing state environmental requirements and norms. The intensive strategy is a strategy based on periodic innovation in the direction of ecologization of recreational land use as well as on one-time changes in the regulatory framework information and communication system for the development of recreational areas.

6) When planning and implementing measures for the ecologization of recreational land use it is considered relevant to develop a roadmap for the ecologization of recreational areas using crowdsourcing methods to attract and implement large-scale innovative projects covering large areas. Additional research should be provided for the development and implementation of relevant documents (strategy and road map) in the practice of recreational land use. It can be stated that based on the combination of foresight methods the process of recreational land use can be advanced to a qualitatively new level since the foresight methodology broadens the spectrum of relations in the field of public-private partnership. This methodology requires full research considering the conditions and purposes of the operation of the investigated object.

4. Discussion

The issue of formation and selection of strategic alternatives in connection with the need for additional research of a practical nature is debatable and requires further research. These studies should be accompanied by an analysis of specific ecological economic and social data of specific territories.

The authors have proposed a list of tools and outline the most suitable ones for determining the effectiveness of ecologization of recreational land use based on foresight research: SMART method for identifying the vision of the future STEEPLE analysis and stakeholder analysis to assess needs and monitor the condition of recreational areas SWOT-analysis to determine vectors development in parallel with the strategy for the formation of alternatives and the roadmap for the implementation of goals.

But the use of certain tools requires specification related to the specifics of economic activity economic development environmental and social status of each country. Important direct factors that affect the effectiveness of using a particular tool are: quantitative and qualitative indicators of recreational land the tourist potential of the country geographical location and consequently the volume of tourist flows. In turn indirect factors include: the level of economic activity of the population the sphere of its employment the availability and redistribution of financial resources social preferences of the population the availability and development of tourist infrastructure environmental status institutional development mechanism for recreational lands.

In connection with the above in the procedure for the foresight methodology implementation in the direction of sustainable management of recreational land use alternative tools are proposed for each phase. Proposals for the use of a particular tool in each country should be justified after conducting targeted studies of individual territories.

5. Conclusions

Consequently the proposed methodological support for foresight forecast and strategies for the use of recreational lands and the introduction of the foresight methodology in the direction of ecologization recreational land use will bring the land use process to a qualitatively new level.

Government of each country must take into consideration the fact that recreational sphere is not national but an international sphere because tourism and economic development of a specific country is connected with its territorial location geopolitical state and international relations with neighboring countries and partners. In modern conditions insufficient attention is paid to the problem of the development of recreational potential due to the complexity of accounting and determining the directions of development of these territories. This problem exists due to different use of target recreational territories as well as the possibility of using lands for other purposes for the needs of recreation. It is concluded that a qualitatively new approach of transition to an innovative strategy of recreational land use as a priority area is necessary. Joint sustainable development of recreational territories is possible by the way of ecologization of each country's economy which will increase the inputs of natural physical and human capital. Within the framework of strategizing recreational land use (as an interconnected process of strategic planning forecasting and management of land relations) a logical-structural scheme of land planning for recreational territories based on the foresight methodology is proposed.

The introduction of the appropriate methodology instead of the existing ones is justified by the need for:

- more detailed forecasting of the prospects for regional development in connection with the interests of the participants;
- creation of a network of parties actively participating in the development of the economic system;
- creating alternative directions for future development;
- modernization of existing resource reserves.

The relevance of the introduction of foresight forecasting has been proved as a technique that can provide forecasts simultaneously in the short and long term considering the interests of public-private partnerships and is aimed at innovative development with significant socio-ecological and economic effects. The proposed scenario within the framework of ensuring the strategy of recreational land use in the direction of ecologization combines a sequence of stages with a set of tools applicable to specific territories. Authors proposed the optimal tools considering the general assessment of cartographic base and quality indicators of the recreational lands of the European Union: SMART method stakeholder analysis GIS-analysis SWOT-analysis strategizing and roadmapping. Alternative tools are also proposed which can be reasonably selected taking into account the characteristics of certain countries and territories.

It is proposed to use this methodology in the development of a strategy for the creation of new and development of existing recreational areas in the process of implementing the practice in the European Union through municipalities and authorities.

Author contributions

Conceptualization: D.B.; Methodology development: T.M. Writing – original draft, review and editing: O.M.

Data availability statement

The raw/processed data required to reproduce these findings cannot be shared at this time as the data also forms part of an ongoing study.

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