



SUMMARY

The preparation phase of the conceptual framework
The Comprehensive Plan of the Territory of the Republic of
Lithuania

CONTENTS

INTRODUCTION	3
1. THE FUNDAMENTAL PRINCIPLES OF THE SPATIAL DEVELOPMENT OF LITHUANIA VALUES, AMBITIONS, VISIONS	4
2. DEVELOPMENT PRINCIPLES OF SPATIAL SYSTEMS AND TERRITORIAL ELEMENTS	8
2.1. Development of spatial systems	8
2.2. Development of territorial elements	13
2.3. Development of specific topics	17
3. ALTERNATIVES FOR SPATIAL DEVELOPMENT AND FUNCTIONAL PRIORITIES	18
4. RECOMMENDATIONS FOR THE IMPLEMENTATION OF THE CONCEPTUAL SOLUTIONS	43
CONCLUSIONS	46

INTRODUCTION

The Comprehensive Plan of the Territory of the Republic of Lithuania (hereinafter referred to as the 'CPRL') is the main territorial planning document of the country, which provides a long-term perspective for the development of the country's territory.

The planned territory is the land and sea territories of the Republic of Lithuania, including the territorial sea of the Republic of Lithuania, as well as areas where Lithuania exercises exclusive sovereign rights, i.e., the contiguous zone and the exclusive economic zone (EEZ), including the continental shelf.

The CPRL will become one of the primary development documents of the country and the solutions provided therein will be valid until 2030, and the proposed vision will be valid until 2050. The conceptual framework of the CPRL establishes general objectives of the development and provides solutions that define the main directions of the development: the spatial development directions of the country's territory are specified, and functional priorities of the usage of remote habitat territories are determined therein.

The preparation phase of the conceptual framework is primarily based on the extensive and comprehensive analysis of the current state of the CPRL and its findings, referring the fundamental values of the country and society. Possible challenges are also considered when developing the conceptual solutions: the inevitable economic changes, the increase in the regional exclusion, ageing society, climate change and its consequences, and so on. The need of the State to create, approve and have a master spatial planning document of this scale can be realised only by the collective work and consensus of the people supporting the development of the State.

The State territorial development is associated with awareness of objectives and principles of sustainable development. In the vision of the CPRL, the sustainable development of the territory of Lithuania is perceived as the entirety of all areas and territorial components, operating in an integrated system and ensuring the creation of sustainable environment. The conceptual framework provides for two alternatives: the implementation of the first one ensures the sustainable development of the country's territory, thus achieving a high level of quality of life throughout the country. The leading solutions of the conceptual framework of the CPRL are highlighted in the text using a particular font – *'a solution of the conceptual framework'*, while the solution of the territorial and spatial structure is additionally marked with the 'τ' symbol.

1. THE FUNDAMENTAL PRINCIPLES OF THE SPATIAL DEVELOPMENT OF LITHUANIA VALUES, AMBITIONS, VISIONS

The exact path of the State's life is difficult to determine due to many internal and global factors; therefore, the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania is drafted based on values to preserve and foster them. First of all, the universally acknowledged principles of sustainable development are highlighted, such as a modern state, which we should use and develop. The general principles are associated with the values of the Lithuanian state and its people, which are laid down in the Constitution of the Republic of Lithuania or, in a fragmentary way, in various strategic documents of the State. It is essential to supplement the values by current events that highlight the development objectives of the State: to achieve the national well-being, preserve identity, be recognisable in Europe and globally. Thus, the values of the State and its people are the foundation of Lithuania's ambitions and vision up to 2050.

The universally recognised sustainable development scheme is linked to the values-ambitions-and-vision pyramid. This link shows the interconnections of the State's values with the outlook direction of the State's development and the people's well-being of people in the long term. The value pyramid model consists of:

- Core values of the country (including the Constitution of the Republic of Lithuania and strategic documents of the country stating the value aspects);
- Ambitions to foster national values, i. e. what we want to achieve.
- Visions that help to implement the ambitions.

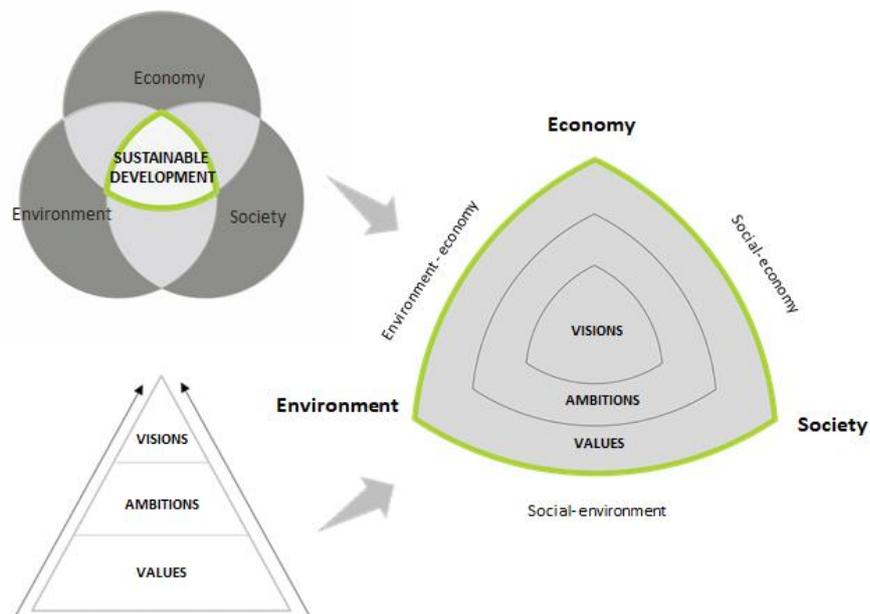
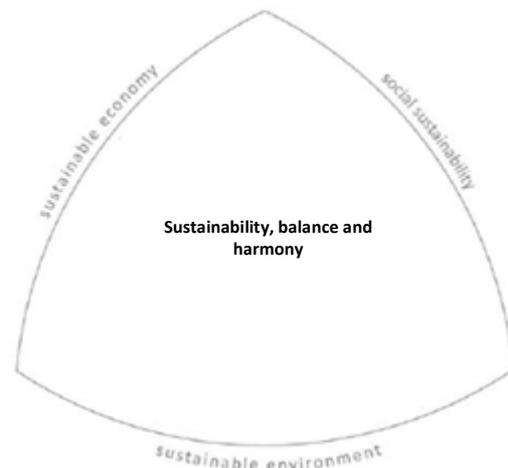


Fig. 1. The sequence of elaboration (adaptation) of the sustainable development model

Values. Economic, social and environmental balance and the sustainable operation of areas by creating positive synergies to satisfy the people’s well-being in the present without compromising the future possibilities for the people’s well-being are considered as one of the cornerstones of the country’s development.

Typical values are complemented and elaborated by the values of the State and its people, reflecting the country’s specificities.



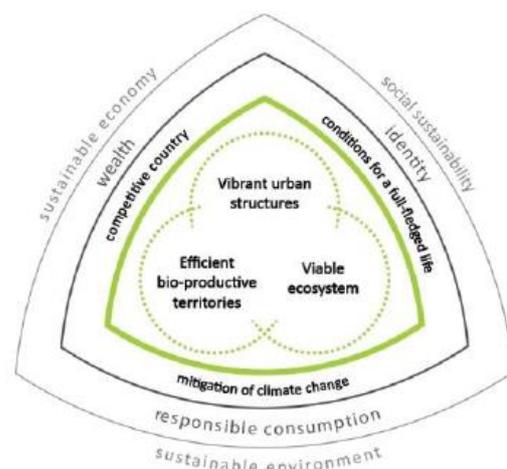
Ambitions. The aim of fostering the value basis is to create a high quality of life, which in turn produces high levels of prosperity in the country. High quality of life is inseparable from responsible consumption/usage, as well as the preservation and the further development of the identity of the environmental, region and the State. Responsible consumption/usage is must be expressed in both daily and systematic actions, and only the overall outcome will result in prerequisites for sustainable development of the country.



Vision means the implementation of ambitions. Three key aspects have been identified for the concept (aspiration) of Lithuania’s territorial development (after the evaluation of the specificity of the comprehensive plan it was sought to examine aspects related to territorial expression or closely related to territorial decisions):

- vibrant urban structures;
- viable ecosystem;
- efficient bio-production territories.

Through implementing these visions by appropriate measures, the State’s competitiveness will be increased, the high-quality living environment (in its broader sense) will be created, the consequences of climate change will be mitigated, and the adaptation to climate change will be achieved.



Following the sustainable development model, the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania identifies and elaborates the main ambitions and visions providing directions for the development of the country's territorial elements and spatial systems.

The following vital spatial systems are distinguished in the conceptual framework:

- urban system;
- economic system;
- mobility (communication system);
- engineering systems;
- ecosystems;
- resources.

National territorial elements are differentiated to:

- Intensive clusters of urbanisations (urban and suburban areas);
- Agricultural areas;
- Sea and coastline;
- (Relatively) natural territories.

The matrix of spatial systems and territorial elements (see Fig. 2) integrates the spatial (spatial systems) and territorial (territorial factors) aspects. The spatial systems are analysed, tested and planned to employ all territorial elements, by underlining their influence, identifying their importance and determining the impact. Different values and expressions of various systems within individual territorial components indicate their weight and significance throughout the spatial structure of the country. Additionally, the derivative and critical topics of the conceptual framework of the CPRL are laid down and examined:

- Identity of the State and the regions;
- Competitive regions, a competitive State;
- Significant objects of the country.

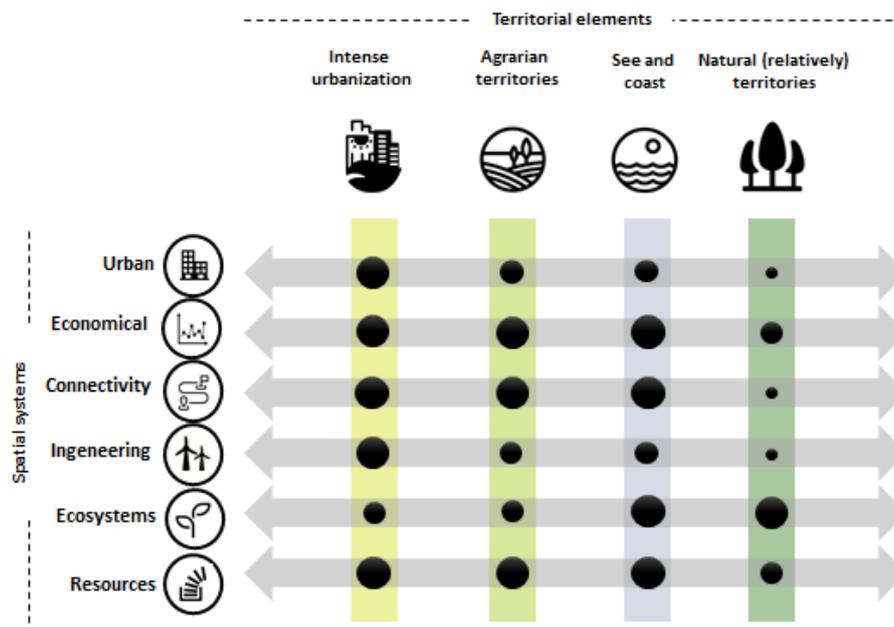


Fig. 2. Interaction diagram of spatial systems and territorial elements.

(Intensity of the operation of the systems in territorial elements: ● – small, ● – average, ● – large)

Spatial systems and territorial elements elaborate the visions that reflect and support the three underlying development visions of the country: a viable urban structure, efficient bio-production areas, vibrant ecosystems, which are more or less expressed in the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania, thus acquiring a specific territorial location.

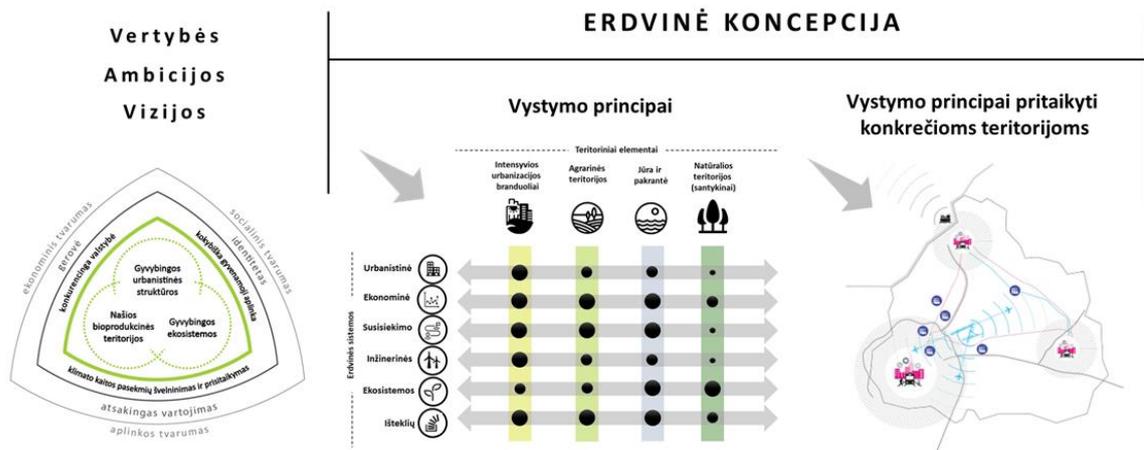


Fig. 3. Integration of values, ambitions and visions.

The provisions for the development of the country listed in the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania must be specified not only at the solution-specification stage but also in the lower-level territorial planning documents, projects, all kinds of strategic documents. The different layers of papers must be interconnected in the original ideological context.

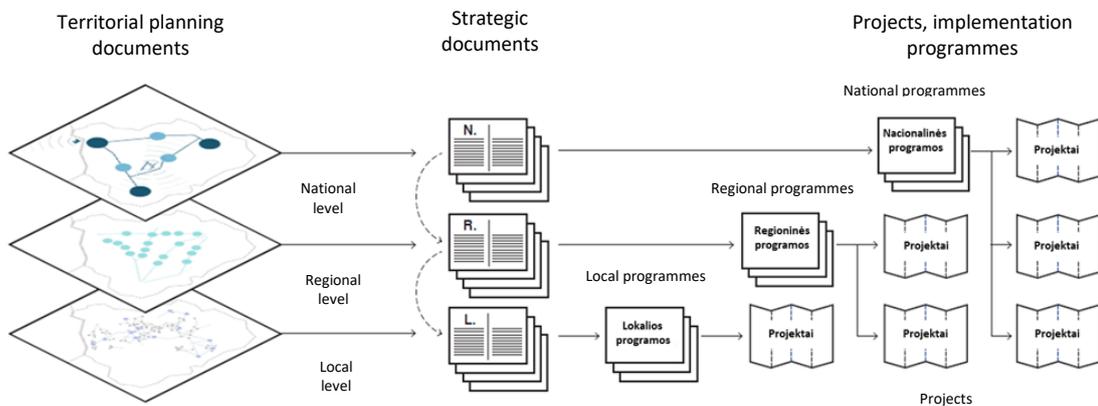


Fig. 4. Integration of values, ambitions and visions in various levels.

The visions of the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania are long-term, and they may be reached in certain phases by successive increments, which are named at the solution-specification stage of the plan.

2. DEVELOPMENT PRINCIPLES OF SPATIAL SYSTEMS AND TERRITORIAL ELEMENTS

2.1. Development of spatial systems

Urban system. To achieve the ambitions and visions set in the conceptual framework, the urban system must create the most favourable conditions for social, economic and environmental development of the country and high quality of life of people. Viable urban structures are built based on sustainability, activity balance and sustainable environment. The vision of the conceptual framework of the Comprehensive Plan of Lithuania is implemented through developing and consolidating the viable urban structures, in the development and the shaping of:

- Polycentric urban system;
- Hierarchic regional centres and their communication system;
- The synergy of centres and the method of affordable services and activities;
- Compact urban development;
- The integrity of the State's urban system with the EU.

The polycentric principle is also a continuous solution of the current Comprehensive Plan of the Territory of the Republic of Lithuania. The importance of the polycentric development is being emphasised in Europe as well, namely in the EU strategic documents: European Spatial Development Perspective (1999), EU Territorial Agenda 2020 (2011), the Pact of Amsterdam enshrined in the EU Urban Agenda (2016).

The Lithuanian urban system operates within the hierarchic polycentric urban structure^T, consisting of urban centres and their functional relationship. Urban centre levels are associated with the appropriate coverage of services – the highest level of urban centres host the broadest range of services, the lowest level – the essential functions. Urban centres are designated to the following standards:

- Metropolitan centres: cities active in the international system of urban centres (interconnected by functional relations of the worldwide level), hosting the most extensive range of services (from those satisfying imperative and relatively frequent needs to services of relatively scarce demand), and acting as the country's economic engines.
- Regional centres: cities that play a particularly important role in regions, providing services ranging from those satisfying imperative needs to those of relatively medium and even partially small demand, and concentrating high service capabilities, economic activities and jobs.
- Regional local centres: cities with the primary objective of maintaining the viability of the regions by working with regional centres, providing services of not lower than relatively frequent demand.
- Local centres are concentrating essential services and serving the smallest territorial units (having evaluated the level of the Comprehensive Plan, the general principles of development are defined for the level of local centres, their significance in the urban public system is understood, but it is not discussed in detail).

A group of demand attributed to urban centres is designated as a minimum service package for the appropriate level of support, and there are no limitations expected under favourable

demographics and economic conditions, to focus higher-level services. The contents of the needs are output-like, and it may be specified or revised in the solution stage of the Comprehensive Plan of the Territory of the Republic of Lithuania.

Urban structure elements are operating in the EU context. The urban system that is appropriately developed with viable urban structure components – sustainable urban centres – creates possibilities not only for the country to generate wealth, reduce regional exclusion but also to encourage prosperous functioning as a full-fledged EU member for increasing the competitiveness of the State. The latter aspect is a particularly crucial structural part of the Lithuanian urban structure, which is visible in the international context. It is established that **the European urban architecture integrates the main urban centres – partner cities Vilnius-Kaunas, Klaipėda, partner cities Šiauliai-Panevėžys**⁷. These urban centres are connected with those of the other Member States by the main transport corridors located in the following directions: North-South (Corridor I (Via Baltica), planned Rail Baltica, and the corridor branch IA (Via Hanseatica); East-West (Corridor IX (branch IXB – Kyiv-Minsk-Vilnius-Klaipėda and branch IXD – Kaunas-Kaliningrad)), as well as pertaining water and air transport links. Through the usage of transport, energy and engineering systems nodes, science and innovation centres and other relative and absolute advantages, the critical Lithuanian urban centres need to break into international value-added chains, transport and logistics, ITT, financial and other service systems. Lithuanian universities available in the most significant urban centres of the country, targeted by their potential, research institutes and innovative business infrastructure, knowledge and competences, become a favourable medium for the active cross-border cooperation, determining the growing investment in R&D activities.



Fig. 5. Diagram of urban structure operating at the international level

Strengthening of the main urban centres, i. e. Vilnius and Kaunas, Šiauliai and Panevėžys, which have a relatively small distance from each other (in the European context) from the territorial point of view by applying the principle of partnership complementarity is planned. Through exploiting the existing and expected infrastructure, the synergy created by large cities partnerships would increase the country's overall weight at the international level, which would, in turn, generate all-round benefits for the internal well-being of the country and improve the quality of life in the regions. Vilnius-Kaunas and Šiauliai-Panevėžys partnerships must be carried out:

- through the creation of a high level of connectivity, allowing them to overcome the distance between them at the lowest possible time expenses;

- by ensuring passenger multi-modal travel opportunities (increasing interoperability and compatibility between international and national public transport services, and so on, and facilitating the movement of tourists);
- by ensuring access to multi-modal and inter-modal cargo logistics;
- by developing a typical relationship with innovation policy systems;
- through the ongoing cooperation between research and innovation centres by an increasing degree of integration of economic, social, cultural and other fields in the international level;
- by positioning itself in a global context as a platform with a suitable environment for start-ups with advanced e-services.

The main activities of Vilnius-Kaunas and Šiauliai-Panevėžys partnerships, which are distinguished in the conceptual framework, are elaborated in the solution-specification stage by supplementing them.

Although the main urban centres and transport corridors active at the international level are highlighted, it shall also be noted that it is essential to shape the regional and lower-level contacts with neighbouring states (especially the EU Member States) urban centres, regions that could contribute to the growth and singularity of Lithuanian cities.

Spatial economic systems. The spatial, financial system is the geographic network of economic activities which are using connections of urban, transport, energy, and engineering systems as well as natural and human resources. The objectives of the spatial, financial system are to ensure sustainable economic growth and competitive development of the country's economy. In order to achieve these objectives, the following key elements are necessary: a convenient infrastructure for land, air and water transport, an efficient energy infrastructure, efficient exploitation of natural and cultural, fossil fuel resources, high quality digital infrastructure, and human resources meeting the needs of the labour market to be ensured by the efficient training and further development system for qualified personnel, high standards of quality of life, and the business environment promoting private initiative.

Communication system/mobility. The communication system is considered to be one of the most important engines driving the country, which in the long run will contribute to the economic value, competitive advantage and visibility in the international context, security in the country, and the maximum quality of life. In the Comprehensive Plan, the communication system is viewed not as the consequence of the performance and quality of the individual components of the communication system but as the entirety of its parts, the effectiveness of which is based on the multimodality and intramodality properties, the absolute interaction and synergy between components of the communication system, which ensures the uninterrupted connectivity between cities, regions, countries through rationally located communication facilities (ports, stations, logistics centres, traction facilities) and efficient communication between them (including ITS and other organisational/management tools and services). A cohesive, economically efficient communication system is safe and has a minimum negative impact on the human health, which is proposed in the Comprehensive Plan to be shaped through the rational use of land, cohesive travelling processes, maximum traffic safety performance, partnership-based economic efficiency and timely implementation of innovative clean logistics processes.

The country's transport system consists of *economic activity corridors*^T, ensuring significant international relations and accessibility of the most active country commercial centres, and *internal country corridors*^T, which are essential for the availability of the countries urban centres and individual territories. The Comprehensive Plan highlights the rational territorial

location of *the infrastructure objects (ports (air, maritime (internal waters)), land transport stations, objects ensuring multimodality and intramodality)^T*, which would provide a regular, sustainable operation and focus on the possibilities and economic activity for a particular use. Specific types of transport or individual infrastructural connections in a system like are not significant until they are interoperable with the others.

Ecosystem – a geo-ecological compensation system. *A full-fledged, viable, resistant and functional eco-compensation system (NC) (green infrastructure), which in the long run should ensure the ecological stability of the entire territory of the Republic of Lithuania, which would create real preconditions for the development of sustainable bio-productive economy and conditions for healthy living and favourable recreation in urban, agrarian, marine, and natural landscapes^T.*

Forest plays a crucial role in eco-compensation, so it is necessary to *increase the overall forestry of the territory of the Republic of Lithuania up to 38–42%*. It is expedient to differentiate the norms of the target forestation, taking into account the nature and intensity of the natural basis of the morphological areas of the landscape, the type of industrial use and the degree of ecological risk. It is also necessary to separate the forest functions by distinguishing the parts of stands that should be protected, adapted for recreation and assigned to intensive economic use.

The protected areas of Lithuania amount to 17.64% of its territory. Following the European Union recommendations (EU Strategy 2020), *the target area of protected systems should be 18%*. The conceptual framework of this plan *provides for solutions related to the establishment and conversion of protected areas^T* (continuity of the solutions of the previous comprehensive plan). It is planned to establish the State parks under sophisticated protection: The National Park of Sudovia and eight new historical State parks. It is also designed to transform some regional parks into historic national parks and to establish new local parks. To ensure the maintenance and management of recreational areas of national importance, it is planned to supplement the ST system with regional recreational parks. New State sanctuaries have been proposed, paying particular attention to soil protection by developing a network of pedological sanctuaries. The development of protected areas should also be linked to the creation of new NATURA 2000 sites.

Resource system. The resource system of the territory consists of non-renewable natural and renewable natural resources, as well as human-made (using natural resources) cultural resources. The primary natural resources are underground natural resources, soil, forest resources, and recreational and cultural potential generated by the totality of the natural and cultural components of the landscape. Cultural heritage resources consist of movable and immovable, intangible cultural heritage as well as the integrating cultural landscape. The conceptual framework establishes the *sustainable usage of resources, preservation of cultural heritage and cultural scene, and integration thereof into other systems*, so that the usage of one resource could not adversely affect the survival potential and quality of other resources, and would be territorially differentiated and prioritised taking into account their natural and cultural value and the potential economic benefits.

The potential of **subterranean resources**, the distribution of geothermal capacities of different mineral deposits or underground depths in the country are uneven. It is the result of millions of years of development of different parts of the country's territory, characterised by different periods, different geological (tectonic, sedimentation, geochemical, and so on) conditions. Each

mineral deposit is unique, occurring at a specific time, in a particular location, under particular circumstances, and is characterised by its particular spatial distribution. The abundance of subterranean resources, territorial distribution does not depend on the urban, functional or administrative division of territories. Instead, it is possible to observe inverse dependencies: areas with different subterranean resources, their abundance, value, availability of resources, differing in their usefulness or exclusivity, traditionally and historically different in their practical use, different urbanisation, technical, social, even cultural or development of engineering infrastructure. Not only their value, demand, quality, technical availability, but also environmental aspects, distances from significant users and other issues are gaining in importance in recent times. Therefore, the exploitation of explored, estimated, or forecasted subterranean resources becomes an increasingly complex 'integral function' that is determined by many aspects and does not directly correlate with the alternatives for the development of the territory of the Republic of Lithuania proposed in the conceptual framework of the CP. In the case of a particular choice, only the logistical aspects of the use of these resources may vary slightly, depending on the more detailed solutions of the planning stages (compared to the Comprehensive Plan). The critical determinants of the use of these resources are the quality of the raw material, its value, demand, the versatile capacity of the deposits, the profitability of extraction, the distances between raw material and production to the primary consumers, which determine not only the use of the raw materials but also the final costs and so on. However, this can only be assessed for each specific purpose of a deposit of subterranean resources about its interconnection to one particular object (a consumer of raw materials). *Therefore, both the first and the second alternatives of the CPRL basically are subject to the same basic principles of the use of subterranean resources (in a broad sense) described in the conceptual framework^T*, which guarantee not only the national economy's supply of local fossil fuels, subterranean thermal, capacitive, etc. utilisation of useful properties, but also protection of the environment, including the underground, from pollution and other negative consequences related to the use of resources, oriented to the protection of renewable resources from exhaustion, ensuring their safe, rational and sustainable exploitation.

The recreational potential of the territory of the Republic of Lithuania is formed by natural and cultured areas with natural and cultural heritage objects located there. Having evaluated the total recreational potential of the territory, it is planned *to increase the importance of recreation in the general structure of the use of territories^T*, by distinguishing the priority territories with the maximum recreational potential. The target is to make territories that have preserved their naturalness and local cultural identity the object of recreation and cognition not only for domestic but also for foreign visitors, to increase the social-economic viability of rural settlements. It is recommended to identify several stretches of landscape with exceptional natural and cultural value, which are recreationally attractive and picturesque.

Engineering systems. Engineering systems include energy systems (electricity, heat and gas), drinking water supply and wastewater management, waste management and communication.

The strategic priority of energy systems for 2030–2050 is a cohesive and independent State in terms of energy. This aim will be achieved through the *transition to a low-carbon economy, ensuring the Lithuanian Energy interconnection with the continental Europe (electricity and natural gas system) and the development of the liquefied natural gas (LNG) infrastructure*. The sector of water supply and wastewater management will probably face challenges of centralised water and wastewater management facilities assurance and related costs on the division of declining population. In the waste sector, in the long term *the transition to a circular economy model* is expected. In the communication sector, the quality of

electronic communication services is essential, as well as securing the development of the whole territory of universal postal services to ensure accessibility, taking into account the trend of declining population in different regions.

2.2. Development of territorial elements

Successful, social, and sustainable cities Successful and sustainable cities are one of the main factors of viability in the regions of their location. The assessment of the current status of the Comprehensive Plan of the Territory of the Republic of Lithuania identifies two major development problems of Lithuanian cities: dispersive growth and shrinking. The conceptual framework suggests *compact urban formation principles that represent the existing conditions for addressing civic issues and ensure further sustainable urban development*^T:

- Dense building structures are formed, according to the specifics of the structure of the city (principles and scaling of the building), the optimum density of the building is sought, the boundaries of the city are identified;
- Sustainable land use (mitigate adverse environmental impacts by reducing land use) and balanced diversity of land use (multifunctionality);
- Functional, structural, social, communication and engineering completeness and complexity of urbanised areas, reuse of brownfields;
- Accessibility of the recreational regions by foot and public transport (enhancing community and social interaction through public spaces, traffic calming and prioritising pedestrian areas);
- Priority is given to public transport in the urban transport system.

The main tools of compact city formation are a consolidation of suburban structures, multifunctionality for short city trips, priority intensification, conversion of central areas, conversion of brownfields and other inner territorial reserves, high architectural quality, functional and aesthetically pleasing spaces. Priority areas for renovation and development shall be identified in the preparation of integrated spatial planning documents of the cities, as well as the planned funds for the development of these territories. Investments must be concentrated to achieve a sophisticated, compact site result.

Cultural heritage in cities is seen as a resource for creating quality, sustainable environment, shaping local identity, social-economic attractiveness, and one of the factors contributing to sustainable development.

The development of cities focuses on *the group of solutions for increasing the quality of life*^T:

- There must be a harmoniously developed network of infrastructure for school and preschool education, oriented towards results and quality of education.
- The modern and accessible network of health services infrastructure.
- Empowering of active ageing.
- Inclusive culture.
- Quality public spaces and easy access to recreational areas. Public spaces must have a clear identity and integrate with the environment. Public spaces have to function as opportunities for social cohesion and local cultural expressions.
- In urban areas, biodiversity to improve the quality of the living environment, biodiversity is required, as well as living and migration conditions, and enhancement of

the connectivity of the remaining island-like natural elements through green connections – corridors.

- Affordable housing. It is important to emphasise that the housing support measures strategy must be consistent with the urban frame development strategy, which also covers the range of public services provided. Young families cannot be encouraged to set up where the social, engineering and communication infrastructure is underdeveloped and unintended.
- Clean city air.
- Efficient engineering infrastructure, great use of renewable energy sources, improvement of energy efficiency.
- The transition to a circular economy.
- Adaptation to climate change. At the city level, climate elements will be monitored, and emergency warning systems will be deployed, ensuring an adequate response speed.

Cities will concentrate on fast-growing, knowledge-intensive services and exports, which should eventually reduce the relative weight of the currently dominant low- and medium-value-added manufacturing, wholesale and retail trade, transport and logistics activities in gross domestic value-added. These structural changes in the Lithuanian economy are necessary to maintain rapid and competitive economic growth and to avoid the so-called 'average-income traps. To promote sustainable economic development in cities, it is vital to offer infrastructure for commercial activities (FEZ, industrial-service parks, public logistics centres).

Complementary strategies (e. g., Smart city, Green city, and so forth) that contribute to sustainable city development, sustainable use of resources, and reduction of GHG emissions can operate in the structure of a compact city.

Organic and economic (sustainable) agriculture and vibrant rural areas. *The resource management of bio-productive agricultural regions is based on the concept of differentiation of agrarian ecosystems by their geo-ecological and eco-agrarian potential, their resistance to dangerous anthropogenic interference, and the ability to assimilate or neutralise the impact⁷.* The agricultural ecosystems of lowland moraine provide for intensive agriculture with arable priority and large-scale land use. It is recommended to develop plateaus by combining intensive and extensive agriculture for the medium-sized land use with an internal conversion priority. This covers the possibility of replacing the intensive agriculture with the extensive one and the arable farming into the non-arable or free-range farming. In the lowland moraine, it is recommended to develop extensive agriculture (for the medium-sized land use) with perennial grasslands and pastures, free-range farming, promoting internal (through the abandonment of arable agriculture and conversion to non-arable farming) and external (through the transformation of agricultural land to forestry uses or other economic activity) conversion. The sandy plains are planned for extensive agriculture on small-scale land use and the diverse nature of farming activities. Priority should also be given to the external conversion of economic activities by changing the purpose of the least productive land from agriculture to forestry. The karst area is particularly sensitive to the impact of human activities, and therefore provides a priority area for extensive organic farming with internal conversion, replacing arable farming with the non-arable one and perennial grasslands and pastures in the most sensitive areas.

The solutions of the conceptual framework will create a legal basis and a landscape management tool for limiting agricultural chemistry and controlling nitrogen emissions; these measures could create actual preconditions for the restoration of biodiversity in heavily agrarian degraded areas.

The improvement of the content of organic matter in soil and the quality of its contribution to the reduction of bio genes emissions to water bodies, the recovery of soil microbiota, the prevention in reducing soil erosion and risk of the increased soil density.

The conceptual framework provides for *a priority for small rural settlements for the development of their internal and external functional links with urban centres and natural territories*^T. Single-farm settlements are related to active farmers only. Healthy communities will in many cases, be an essential condition for the vitality of rural settlements. Cultural heritage should be protected through the enhancement and adaptation of cultural heritage sites, the promotion of continuity of traditions, the development of the infrastructure needed for heritage conservation, and the promotion of social vitality and economic utility through the development of infrastructure networks.

When adapting the infrastructure for the smooth provision of high-quality cultural services in rural areas, it is essential to focus not only on the more effective dissemination of culture but also on the improvement of the social living environment. Alternative spaces, heritage sites, public spaces can be used to *optimise the cultural services provided and integrate individual objects into a complex network providing socio-cultural services, and to channel funds towards content creation, provider empowerment and community engagement*. To raise awareness of the value of culture and raise the level of cultural consumption, it is essential to *promote access to cultural education*, by providing access to cultural services for the population, especially children and young people. To this end, *the potential of local communities can be harnessed* by providing incentives and tools to strengthen local communities and enable them to access local cultural resources. *Empowering communities to use local cultural content and resources* to solve specific problems and create and maintain identities would provide essential public services at the local level and enhance the vitality of localities.

Natural areas as the basis for ecological balance. The optimal landscape structure (natural, agrarian and urbanised) structure should be realised through the identification, enhancement and display of landscapes of exceptional value. *The conceptual framework envisages the formation of a functional, socially and naturally viable and imaginative scene, ensuring continuity of economic activities*^T and creating favourable living conditions in terms of social and environmental quality, and opportunities for maintaining various elements of wildlife and biodiversity. The landscape structure should be nurtured through the upkeep of the land, its aesthetics and its historical features.

Most of the Lithuanian landscape has been formed through the interaction of the natural and cultural environment. Therefore, the built cultural landscape must be protected, managed and planned in a way that is consistent with the cultural heritage and the relevant protection requirements applicable to the latter.

In order to achieve an improved awareness of the standard landscape value in different ethnic regions, it is necessary to focus on the targeted representation of the cultural landscape habitats of exceptional value, the support of their specific economic use, the promotion and preservation of the landscape components specific to diverse ethnographic regions, by promoting a purposefully targeted and deliberate use rather than a strict protection.

The rest of the natural landscape (wooded and swampy lake) should be managed and protected, ensuring its uniqueness and representativeness. Sustainable use of biological resources (especially forests) is essential to maintain and improve the overall condition and functionality of these areas.

Limiting the pollution of surface and groundwater from urban and agricultural areas is one of the necessary conditions for the overall vitality of the landscape. Integration of protective green spaces into the structure of farming territories would help to restore water quality in water bodies and would facilitate the restoration of hydro-ecosystem biodiversity.

The natural carcass (NC) area should account for at least 65% of the country's territory^T. Several directions for increasing the geo-ecological potential of the GC territories are envisaged: (a) maintaining existing potential through sustainable, economically and environmentally rational use of resources; (b) restoration of damaged and severely damaged agricultural potential through artificial and/or natural means; (c) restoring the geo-ecological potential of severely damaged and degraded the GC sites in urban areas through alternative ecological compensation measures.

The restoration of the natural carcass structure of agricultural areas will create the physical conditions for increasing the geo-ecological and eco-agrarian potential of damaged and severely damaged agricultural areas, creating preconditions for the restoration and enhancement of biodiversity and creating better conditions for maintaining the fertility of agrarian land^T.

In natural areas, the GC development will create the preconditions for natural landscape stabilisation processes, which would ensure the preservation of the relatively natural landscape areas and, in areas with weak geo-ecological potential, the potential for their restoration^T.

In urban areas, to improve the quality of the living environment and to better adapt to the effects of climate change by ensuring biodiversity, the integration of preserved natural elements into green spaces – corridors – is envisaged^T. Green infrastructure measures link the aspects of wildlife scattered throughout the urban areas to a single, organically functioning, urban natural frame structure. Ensuring the quality, productivity and viability of urban soil are considered to be a prerequisite for the excellent functioning of the connections. The realisation of the latter aims should contribute to the successful improvement of the quality of the urban environment, the aesthetic appeal of the city and the economic value of its parts.

Responsible use of the sea and coast. Conditions necessary for the sustainable development of the Lithuanian maritime territory (seaside, high seas) and the transnational goals and objectives set out in the Comprehensive Plan: *safe, clean and efficient naval transport; a coherent energy policy; a healthy marine environment; one of the essential conditions is functional environmental status for the quality of the natural and cultural resources available; sustainable fisheries and aquaculture; and climate resilience.*

In the system of functional zoning units of the territory plan of the Republic of Lithuania, two areas of user priority are distinguished:

- SEASIDE. Existing uses are shaped by recreation, sustainable forestry and agriculture and fishing, with priority, uses being recreation, conservation and fishing, as well as transport;
- OFFSHORE. An area where environmental interests intersect and opportunities to expand other activities are prioritised for nature conservation and sustainable use.

The development of the usage structure of the sea area is determined by its relations with the urban centres of the land, especially with Klaipėda, state-category and support-type metropolitan centre, and Klaipėda port. The international East-West transport corridor, which is being formed in the territory of the sea, passes through Klaipėda. The preconditions for proper

development are the Šventoji-Būtingė region, where the oil terminal is already operating, the reconstruction of Šventoji port is being started, and one of the options for the construction of an external deep-water port is being explored.

2.3. Development of specific topics

Strong territorial identity of Lithuania Local identity shall be developed *by creating strong links between different sectors, municipal and local communities, and having regard to the social, cultural and historical patterns.* Lithuania, which has different and unique ethnic regions, can create not only a local or national but also a regional cultural identity. *Fostering of tangible and intangible cultural heritage, new narratives based on territorial exclusivity* would contribute to the creation of the welfare of the country by establishing forms of expression of the public spirit. *Fostering cultural landscape of an exceptional value must be developed by more significant opportunities for a better understanding of the protected values,* promoting public awareness in respect of protected areas, and ensuring the protection of the values of protected areas, development of this system. Members of the public are not necessarily benefiting from access to the cultural and recreational services sector, but the overall awareness creates a national identity, the pride in national culture and encourages the preservation thereof for future generations. Character creates the feeling of belonging to social structures, environment or nation.

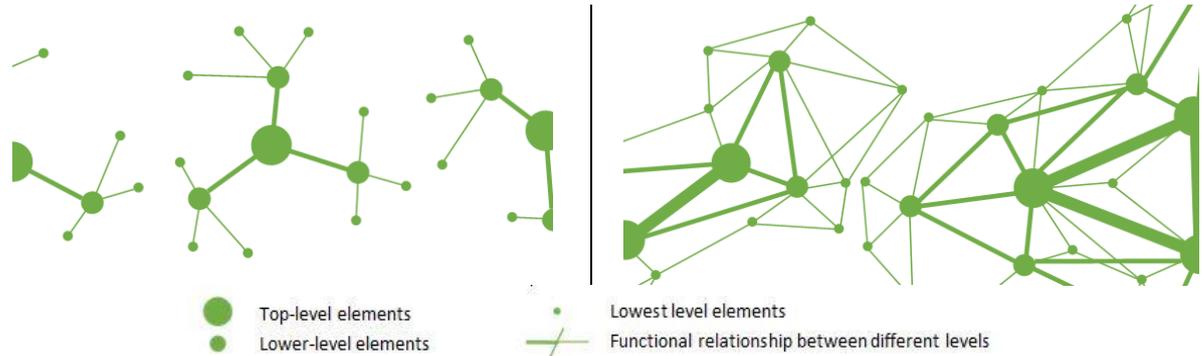
Lithuania's strategic objects. The conceptual framework describes the country's vital objects that contains the definitions of the Law on Territorial Planning and the Law on Land Withdrawal for Social Needs in the Implementation of Economic Projects of National Importance. The list of the relevant resolutions of the Lithuanian Parliament (the Seimas) of the Republic of Lithuania and the Government of the Republic of Lithuania to recognise the economic projects of national importance projects and the resolutions of the Seimas of the Republic of Lithuania to recognise the projects of extraordinary national importance. *A preliminary list of new strategic objects proposed by the CPRL is submitted.*

Competitive country. A competitive state is characterised by sustainable and balanced economic growth, the continuance of the economic competitiveness in the international environment, and average demographic and global balance of migration, having a specific provision of high-quality public health, education, security, cultural services, and efficient transport, engineering and digital infrastructure.

3. ALTERNATIVES FOR SPATIAL DEVELOPMENT AND FUNCTIONAL PRIORITIES

ALTERNATIVE I	ALTERNATIVE II
---------------	----------------

General description of alternatives



The first alternative of the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania includes the solutions enabling to achieve the ambitions and visions (see Fig. 1, diagram 'Values, aspirations and ideas') by **developing the country's spatial structure with ten regions, namely, Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys, Alytus, Marijampolė, Utena, Telšiai and Tauragė**. In this alternative, **a priority is given to the principle of autonomy of equitable regions, whereby public investment in the territory of Lithuania is distributed as evenly as possible, and a wide range of essential services is concentrated in each region^T**. The territorial distribution of the major urban centres in the ten regions is relatively even in the country, which makes possible assumptions for the relatively equal access to regional services. The system of provision of education, health and social security services is based on the principle of hierarchical urban structure, which provides different levels of essential public services in the territories of individual urban centres. However, even the actual reach does not ensure the same level of public services and quality of life in the long run. In the case of this alternative, the regional logic and development strategy of regional centres in Lithuania would cover the area fairly evenly with medium efficiency mobility service packages, but

The second alternative of the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania **propose partnership principles that are active within the current structure of the country by creating conditions for a more flexible adaptation to the changing demographic situation, optimising resources and financial resources required to achieve a high quality of life in the whole territory of the country^T**. By facilitating cooperation, not only urban centres but also regions are strengthened. According to the principles of this alternative, a targeted systematic concentration of the country's investment should be focused on the partner entities in areas and territories which, considering their strengths and specificities, can bring the most significant benefits and returns not only to the specific location but also to the region and the State.

Evaluating existing spatial structure and systems in it, five partnership groups are modelled having the territorial basis, creating new synergies, and **ensuring stability in the country^T**:

- Vilnius-Utena-Ukmergė;
- Kaunas-Marijampolė-Alytus;
- Klaipėda-Tauragė-Telšiai;
- Šiauliai-Mažeikiai;
- Panevėžys-Biržai-Rokiškis.

Partnerships are created by various types of interfaces. Through the identification of these interfaces – an absolute uniformity, certain

regional connections should be strengthened, and autonomous transport corridors should be ensured to ensure the quality of the centres.

The objective of each region is to remain a centre of attraction for citizens and businesses alike, building on its competitive advantages and creating favourable urban, transport, engineering and other systems, thereby justifying its independence. The focus is on fostering local identity through the individual exploitation and preservation of local cultural resources as a factor for competitiveness. At present, both demographic and economic activity trends reveal that these regions are developing very unevenly, with different starting positions and potential for future development. Perceiving the aim of remaining a competitive state with efficiently managed public and budgetary resources, this alternative runs the risk of failing to achieve sustainable development in the long term in the absence sufficient demographic growth (and especially in non-metropolitan areas).

aspects are assessed, having a territorial denomination and describing both existing dependencies and potential opportunities:

- the physio-morphological issue describes the available natural basis;
- territory-shaped activity potential, for example, productive land implies agrarian activity, and evocative landscape – recreation and tourism;
- economic aspect – boundaries of functional regions according to PIT remittances of employees (based on ‘Invest Lithuania’ information);
- communication potential – when urban centres and economic areas are connected by at least two high-quality alternative transport systems (existing and planned);
- physical contiguity – territorial contiguity of lower-level centres with higher-level centres.

It is the territorial utilisation of certain aspects, interests and potentials that enables the strengthening of existing structures and the creation of synergies, new values that cannot be achieved on their own.

Partnerships create synergies in the provision of services at the international, national or regional level, help to make more efficient use of public financial, administrative and human resources, avoid duplication of public functions in adjacent territories and support sustainable and competitive state development. The combined transport and another potential of the partner cities makes it possible and suggested to organise high-efficiency mobility services in large part of Lithuania. Provision of regions with engineering infrastructure, waste management and communication services would also be provided through priority partnerships, e. g., providing for tasks to implement the circular economy at the regional level would enable partnerships to make better use of available resources. New narratives, based not only on the distinctiveness of places but also on their relationship, would reinforce a sense of belonging to the same culture and a collective identity.

This alternative aims at more straightforward and more efficient management and investment allocation. Synergies between municipalities and

regional development take place without changing the established administrative system. The need for system changes will become evident as the process progresses and can be modified accordingly. The solutions of Alternative II can be implemented in stages, detailing them in the solution-specification stage. In implementing the answers of this master plan, specific pilot projects may be carried out to identify realisation problems and validate best practices.

Urban system and its structure

For the period up to 2050, only the population of the major cities – Vilnius, Kaunas, Klaipėda and their neighbouring municipalities (in total eleven districts), is projected to grow. Demographic stabilisation is forecasted in the ‘growth clusters’ Šiauliai and Panevėžys, their circular districts and the municipalities located between Vilnius and Kaunas (in total ten towns). The remaining 39 municipalities are expected to shrink. The current demographic trends are expected to stay the same until 2050; thus, maintaining structures need to be put in place to help the country rationally and optimally use its available resources, while creating an urban network of locations that will ensure the quality of life throughout the country.

The conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania, taking into account the level of the Comprehensive Plan being prepared, forms solutions for the three highest standards and defines the basic principles for the local level, but they are not elaborated or graphically depicted.

The conceptual framework distinguishes the supporting urban structure, which will be elaborated at the solution-specification stage. Each level of both urban centres and functional links includes objects of different potential, strengths or weaknesses. At the next phase of preparation of the master plan, these objects will be given individual development measures. Under favourable conditions, the growth of the urban structure elements – urban centres – is unrestricted; it is noted that it must be balanced, corresponding to the ambitions and visions listed in the Comprehensive Plan of the Territory of the Republic of Lithuania.

To achieve regional stability and prosperity throughout the country, the polycentric principle is applied to the functioning of urban systems – a hierarchical polycentric urban structure is formed. In the first alternative of the conceptual framework, *the elements of the urban structure are associated with priority functional relationships with higher-level components, corresponding to a sequential hierarchical pyramid-type model^T*. This structure operates at international, national, regional and local levels.

The second alternative, while developing the urban system, also seeks to ensure the most favourable conditions for the social, economic and ecological development of the country and to create the preconditions for a high quality of human life, given the negative demographic projections for 2050 – the rational and optimal use of available resources and the development of systems that allow for quality living conditions throughout the country. As a result, we must work together to build on our shared strengths and to discover the potential benefits. To achieve this, *a polycentric hierarchical urban structure is developed, based on the model of an established network, which maintains the*

homogeneous structure of residential areas and especially strengthens functional links between certain groups of elements.

The introduction of the partnership principle in this framework allows for the creation of much more favourable values than could be achieved by acting alone or in a relatively individual capacity.

The following levels of urban centres are determined in the alternatives:

Metropolitan centres are differentiated according to their specific features:

- Capital – Vilnius;
- Transnational communication – Kaunas;
- Seaside – Klaipėda.

In the first alternative, regional centres are broken down into the following types:

- Developmental type – cities that are of particular importance to local habitats and operate actively according to their capabilities on an international level, provide services ranging from those satisfying imperative needs to those of relatively medium and even partially small demand, concentrate high service capabilities, jobs and are economic donors. These are Šiauliai and Panevėžys. The functioning of these centres has been strengthened through mutual partnership, creating significant assumptions the support of the viability in the northern and north-eastern Lithuania;
- Supportive type – cities that play a particularly important role in maintaining the quality of life in the region, provide services of at least relatively moderate demand. These are Alytus, Marijampolė, Utena, Telšiai, Tauragė.

In the second alternative, regional centres are broken down into the following types:

- Developmental type – cities that are of particular importance to local habitats and operate on an international level, provide services ranging from those satisfying imperative needs to those of relatively medium and even partially small demand, concentrate high service capabilities, jobs and are economic donors. These are Šiauliai and Panevėžys. The functioning of these centres has been strengthened through mutual partnership, creating significant assumptions the support of the viability in the northern and north-eastern Lithuania;
- Supportive type – cities that play a particularly important role in maintaining the quality of life in the region, provide services of at least relatively moderate demand. These are: Alytus, Utena, Marijampolė, Tauragė, Telšiai, Mažeikiai;
- Supplementary type – cities that are important for local habitats, are priority partners of regional centres and provide part of services offered by regional centres, an appropriate level of service and jobs. These are Ukmergė, Rokiškis, Biržai.

Regional local centres – cities with the primary objective of maintaining the viability of the regions by working with regional centres, providing services of not lower than relatively frequent demand.

Local centres – concentrating essential services and serving the smallest territorial units.

Solutions at the international level of the urban structure remain the same as in both alternatives (see Chapter Development of Spatial Systems, Urban System).

Ten urban centres are operating at the *national* | The urban structure of the *national level* is

level in the urban structure corresponding to the present state of the administrative division of the regions: three metropolitan centres Vilnius, Kaunas, Klaipėda; two regional development centres – Šiauliai, Panevėžys; five regional support centres – Telšiai, Tauragė, Marijampolė, Alytus, Utena. Viable regional centres – factors of regional growth and stability, creating preconditions for maintaining equal living conditions.

At the *regional level*, urban centres at all levels have their respective weight and significance in the spatial structure of the country. In addition to the above ten centres, 54 local, regional centres are planned. The importance of functional links between lower and higher levels of urban centres is emphasised.

Although the *local level* is not specified, it is noted that area-level urban centres and links with higher-level centres are no less critical in the urban system for ensuring the quality of life throughout the country.

dominated by fourteen urban centres operating in the following groups: Vilnius-Utena-Ukmergė; Kaunas-Marijampolė-Alytus; Klaipėda-Tauragė-Telšiai; Šiauliai-Mažeikiai; Panevėžys-Biržai-Rokiškis. Partnerships between urban centres operating at the national level create the preconditions for the higher value and quality of life by using the available resources, available/developing infrastructure (from social to engineering) with fewer resources. Factors of complementarity between urban centres, co-distribution of services through partnerships, allow them to remain competitive, to respond more flexibly to changing demographic realities and to the challenges of urbanisation – to maintain an equivalent standard of living in the country.

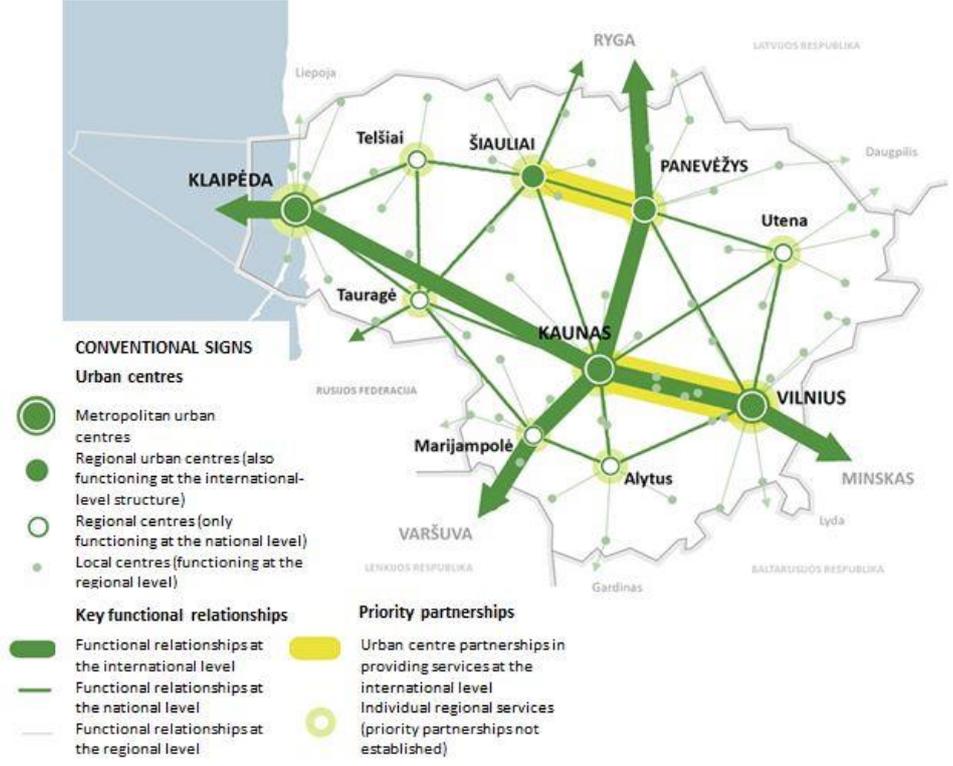
At the *regional level*, urban centres at all levels have their respective weight and significance in the spatial structure of the country. In addition to the fourteen centres mentioned above, 50 local, regional centres are envisaged (different from the first option because the four local, regional centres are classified as upper-level urban centres. There are also strong links not only with the dominant urban centres in the region but also with other centres under the influence of the partnerships between the regional centres.

Local level urban centres must also optimise the infrastructure needed for the quality of service provision, apply the partnership principle to maintain/develop it, and contribute to ensuring mobility, accessibility of services between local and upper-level urban centres.

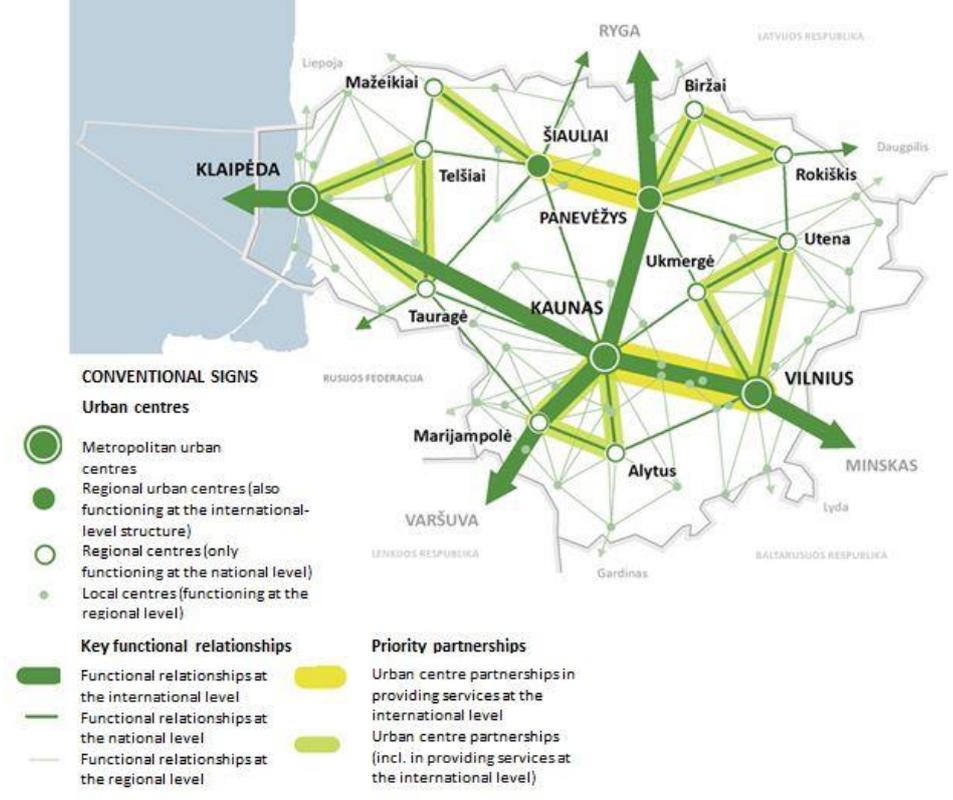
Urban centre partnerships do not create typical urbanisation, they do not encourage them, and urban centres are compact cities.

Country's urban structure

Alternative I



Alternative II



ALTERNATIVE I

ALTERNATIVE II

Distribution of services in the urban structure

The principles and objectives of the public service system under Alternative I:

- *Establishment of a network of educational infrastructure that is coherent and oriented towards achievement and quality of education (through an incentive system). Existing infrastructure is used efficiently, implementing the principles of integration of functions and ensuring high availability of services. Urban centres at the regional and local level are responsible for the efficient operation of the educational infrastructure network and the quality of education services within their territorial scope.*

- *A flexible network of pre-school education infrastructure is being developed, increasing the availability of pre-school education services, especially in rural areas.* It creates opportunities for locally based urban centres to build compact pre-school age groups based on existing infrastructure.

- *There is a system of health care infrastructure, ensuring demographic situation and equal access* (the exact number of inpatient hospitals and the type of services provided will be determined during the restructuring of the hospital network).

- *The system of social services for the elderly is based on a useful integrated social services model where the social needs of the elderly and people with disabilities are met through coordinated action between health and social care professionals.*

In this alternative, the distribution of cultural services is based on a hierarchical principle, with minimum standards for the accessibility of services, but to ensure the best availability and quality of services in any urban centre. The lowest level urban centres provide access to basic (e.g., cultural education) cultural services and the higher-level urban centres offer high quality professional cultural services (e.g., services provided by national cultural institutions).

- *National centres for cultural competence providing services of relatively*

The principles and objectives of the public service system under Alternative II:

- *Establishment of a network of educational infrastructure that is coherent and oriented towards achievement and quality of education (through an incentive system). A functioning infrastructure is used efficiently, implementing the principles of multifunctionality and integration of functions. Utilising partnerships between urban centres, infrastructure requiring significant investments is managed jointly (e.g., swimming pools, sports grounds, learning laboratories).*

- *A flexible network of pre-school education infrastructure is being developed, increasing the availability of pre-school education services, especially in rural areas.* It creates opportunities for locally based urban centres to build compact pre-school age groups based on existing infrastructure.

- *There is a system of health care infrastructure that meets the demographic specifics and needs of urban centres, effectively utilising the specialisation of medical institutions* (the number of inpatient hospitals and the type of services provided will be determined by implementing the restructuring of the hospital network).

- *The system of social services for the elderly is, based on a useful integrated social services model where the social needs of the elderly and people with disabilities are met through coordinated action between health and social care professionals, by combining existing competencies, skills, resources and shared infrastructure.*

- Cooperation between different types of urban centres in the health and social spheres is very intensive. Lack of supportive care and nursing and institutional care services in the city are compensated by providing such services in other municipalities. The service infrastructure shall be managed and developed for optimal use of the shared infrastructure network.

In cultural services, this alternative offers a shift from directly performing cultural dissemination

scarce demand. Such centres of excellence could become state cultural and art institutions operating in major cities as well as municipal institutions and cultural centres.

- **Regional centres of cultural competence providing services of relatively moderate demand.** These centres act as facilitators for the implementation of the basic package of cultural facilities and should have an optimal network, differentiated according to the specific needs and resources of the area.

- **Specialised cultural institutions providing services of relatively frequent demand** – cultural institutions are differentiated by cultural sectors and ensure the provision of services and development of a specific cultural branch.

- **Local cultural infrastructure providing access to essential services** – local cultural infrastructure points, providing a basic cultural package that includes different service providers, regardless of legal status.

Summary of the conceptual solutions of the first alternative:

- In implementing this alternative, the public service delivery model is based on the conceptual model of the hierarchical system of urban centres being formed;

- Urban centres of different levels within their territory are responsible for the operation of the network of essential public services (according to the level of a hierarchy of functions assigned to them) and the quality of services provided;

- The availability of public services and the adequate territorial distribution thereof shall be pursued;

- In the case of surplus public service infrastructure – optimisation of such support and integration of functions is performed taking into account demographic situation;

- The alternative I proposed to optimise the network of cultural services would ensure a balanced territorial provision of cultural services. However, standards of access to services based solely on territorial principles and not on a qualitative cross-section of resources and demand may not guarantee the actual provision of quality cultural services. Without an integrated approach to the provision of cultural facilities, there is a risk of widening the cultural

functions in individual urban centres to establishing partnerships between different levels of urban centres, allowing for a focus on responding and educating the needs of residents through centres of different levels:

- **The national centres for cultural competence are the bodies that perform their functions at the highest level, providing expert, managerial, methodological and mentoring assistance to regional centres.** Such centres of excellence could become state cultural and art institutions operating in major cities as well as municipal institutions and cultural centres. Such centres would have a particular role to play in implementing national priorities, coordinating activities and providing resources at a national level.

- **The regional centres for cultural competence act as facilitators and facilitators for the implementation of the basic package of cultural services,** and should have an optimal network, differentiated according to the specific needs and resources of the area.

- **Specialised cultural institutions – cultural institutions are differentiated by cultural sectors and ensure the provision of services and development of a specific cultural branch.**

- **Local cultural infrastructure providing access to essential cultural services and providing cultural education functions** – local cultural infrastructure points providing a basic cultural package that includes different service providers, regardless of legal status.

The key to the success of the partnership-based service delivery model is to ensure that these services are accessible through mobile platforms of different levels and efficiency.

Summary of the conceptual solutions of the second alternative

- In implementing this alternative, the public service delivery model is based on the partnerships of urban centres and the principal model of the potential interconnection system;

- Urban centres of different levels, individually and collectively, in collaboration with other urban centres, responsible for the operation of the primary public service infrastructure network and the quality of services provided;

- In Alternative II, the territorial localisation of essential public services is less rigid – a share

accessibility gap.

of services of relatively scarce demand and a percentage of services of relatively moderate demand occurs in the hierarchy of functions. It means that the cooperation between urban centres and the specialisation and complementarity of services can only provide part of the services (other services are provided by other urban centres within the partnership);

- In the provision of public services, the aim is to improve the mobility of an efficiently functioning public service system, ensuring accessibility through partnerships of urban centres;

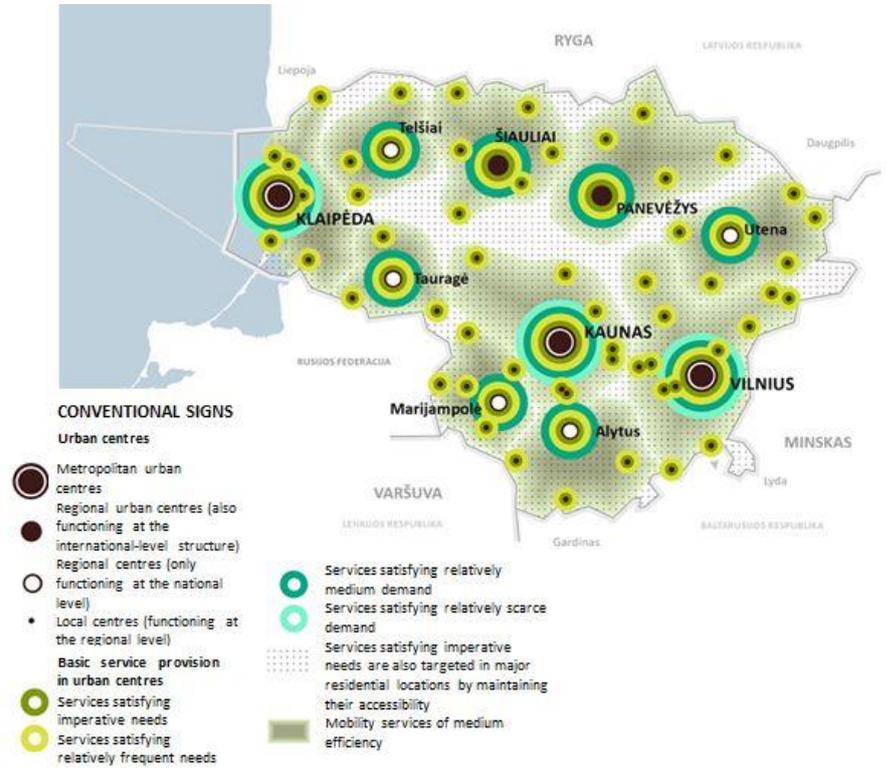
- Cooperation between different types of urban centres in the health, education and social spheres is very intensive.

- In case of surplus public service infrastructure – optimisation of such support, integration of functions is performed taking into account demographic situation, the principles of functional integration, multifunctionality and shared management and sharing of infrastructure are being implemented.

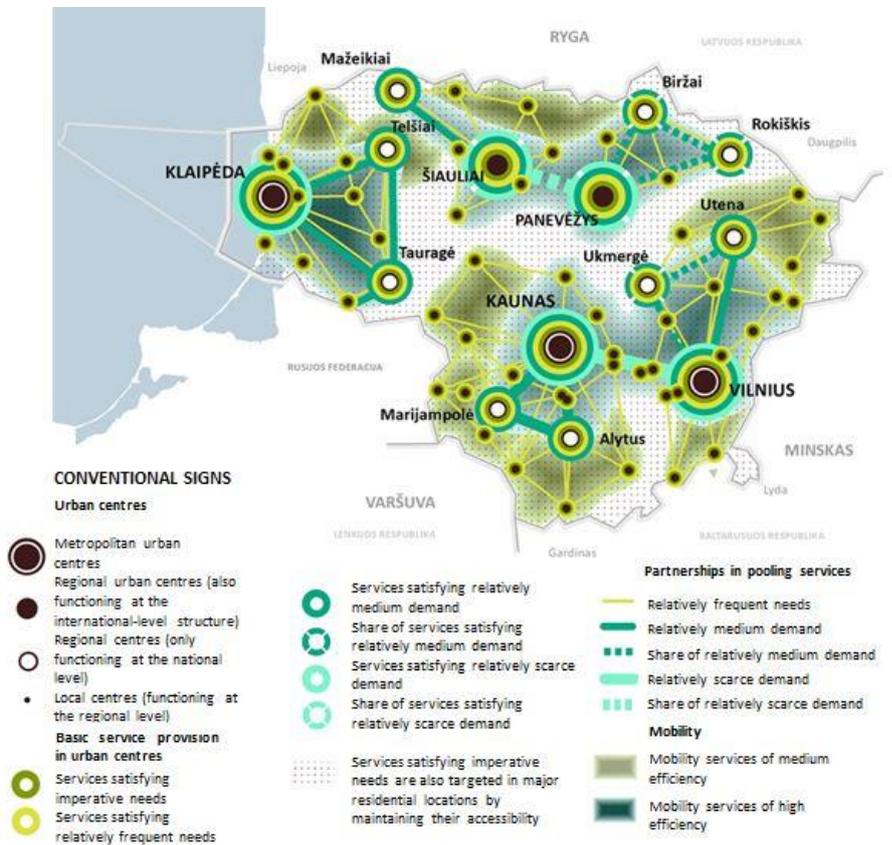
Both in the first alternative and the second alternative, the package of public services has yet to be assessed by population concentration for the services concerned. As the latter indicator is more volatile than individual systems and it is practically impossible to provide detailed forecasts of the population for the planned period in the respective territories, the concept solutions do not offer graphical solutions in this aspect. The supply of public services must be responsive to demographic change. Under favourable demographics and economic conditions, urban centres could be provided with a higher level of service than shown in the diagram.

Primary distribution of public services by the levels of urban centres

Alternative I



Alternative II



ALTERNATIVE I	ALTERNATIVE II
Communication system/mobility	
<p>In the case of this alternative, based on the logic and development strategy of regional centres in Lithuania:</p> <ul style="list-style-type: none"> ● To ensure high-quality interconnection centres, individual connections and autonomous transport corridors should be created (considering the relatively underdeveloped infrastructure of today) on public roads, thus developing an alternative to road transport. Here, the introduction of new support offers the risk of not maintaining a healthy cost/benefit balance. ● The whole territory of Lithuania would be covered evenly with moderate efficiency mobility packages, which: <ul style="list-style-type: none"> ● on the one hand, would ensure equal attractiveness and opportunities for all regions in terms of mobility, but ● no area (except for cities providing international, national transport services) would (due to financial challenges) create the conditions for extremely high-quality movement (especially for the significant centres of attraction). <p>Structural elements of the conceptual solutions of the first alternative:</p> <ol style="list-style-type: none"> 1. <i>Three centres providing international transport services are maintained and strengthened: Vilnius, Kaunas and Klaipėda^T. Support of the global transport network – two existing corridors and upgraded international corridors.</i> 2. <i>Two national service centres are maintained and strengthened (Šiauliai, Marijampolė), infrastructural (Rail Baltica), and organisational measures (particularly for passenger transport) are implemented to enable Panevėžys becoming the communication centre of national importance^T.</i> 3. <i>Upgrading infrastructure and implementing organisational (for passenger transport) measures in eleven cities (Palanga, Telšiai, Tauragė, Radviliškis, Utena, Ukmergė, Jonava, Kėdainiai, Kaišiadorys, Alytus, Druskininkai) for them</i> 	<p>In the case of this alternative, based on the partnership-based concept and development strategy in Lithuania:</p> <ul style="list-style-type: none"> ● By using the combined transport and another potential of the partner, cities make it possible and suggested to organise high-efficiency mobility services in large part of Lithuania. ● In the spirit of partnership, the infrastructural enhancement of some corridors of regional importance is meaningless, since the same result (high level of mobility of people and goods) can be achieved by organisational measures that require fewer resources; ● however, securing communication within zones of partnerships is not a cost-free investment to secure missing links (especially if an alternative to road transport is being developed). <p>Structural elements of the conceptual solutions of the second alternative:</p> <ol style="list-style-type: none"> 1. <i>Three centres providing international transport services are maintained and strengthened: Vilnius, Kaunas and Klaipėda. Support of the global transport network – two existing corridors and improved international corridors^T.</i> 2. <i>Two national service centres are maintained and strengthened (Šiauliai, Marijampolė), infrastructural (Rail Baltica), and organisational measures (particularly for passenger transport) are implemented to enable Panevėžys becoming the communication centre of national importance^T.</i> 3. <i>Upgrading infrastructure and implementing organisational (for passenger transport) measures in eight cities (Telšiai, Tauragė, Utena, Ukmergė, Jonava, Kėdainiai, Alytus, Druskininkai) for them to become the service centres of regional level^T.</i> 4. Interconnection and communication between all centres are ensured by <i>four national, ten regional corridors and two recreational-regional corridors^T.</i> 5. <i>Three objects providing international transport services (existing airports of Vilnius and Kaunas, the current Klaipėda seaport),</i>

to become the communication centres of regional level^T.

4. Interconnection and communication between all centres are ensured by *seven national, nine regional corridors and two recreational-regional corridors^T.*

5. *Three objects providing international transport services are maintained and strengthened (existing airports of Vilnius and Kaunas, the current Klaipėda seaport), and two national-level objects (existing Palanga and Šiauliai airports); three new transport infrastructure objects are planned (RailBaltica project, modern airport, deep-sea outer seaport)^T.*

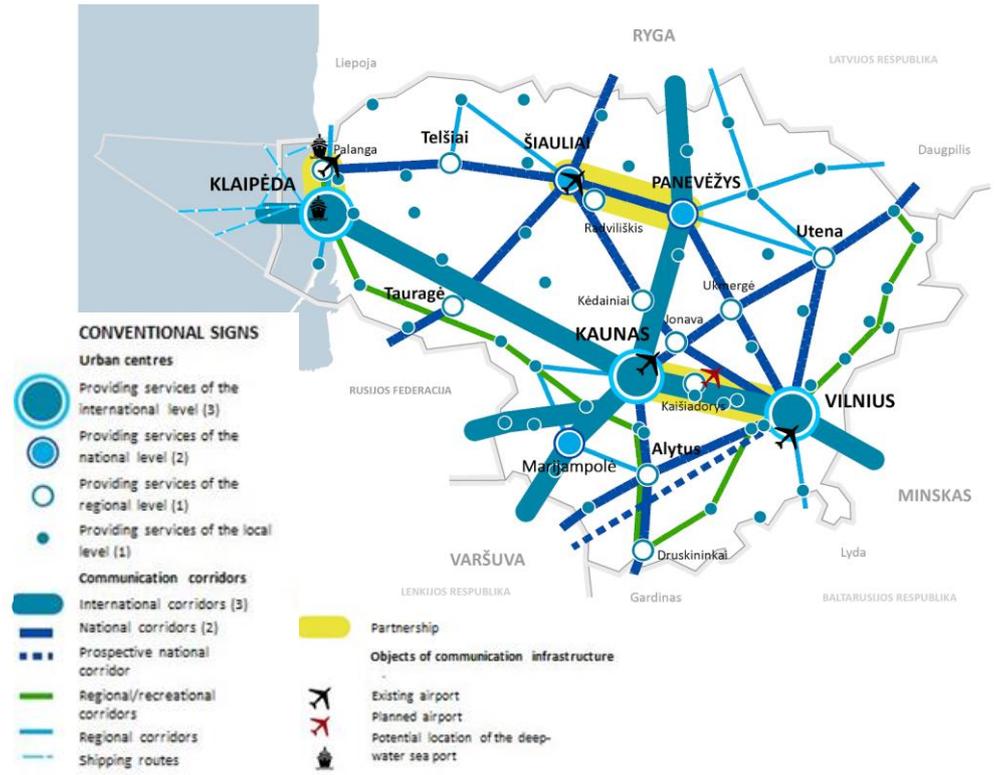
6. *There are two qualitative level mobility services available: 10 Intermediate (efficiency) mobility zones and the accessibility services (mobility as a right) zone^T.*

and national-level objects (existing Palanga and Šiauliai airports) are maintained and strengthened; three new transport infrastructure objects are planned (RailBaltica project, modern airport, deep-sea outer seaport)^T.

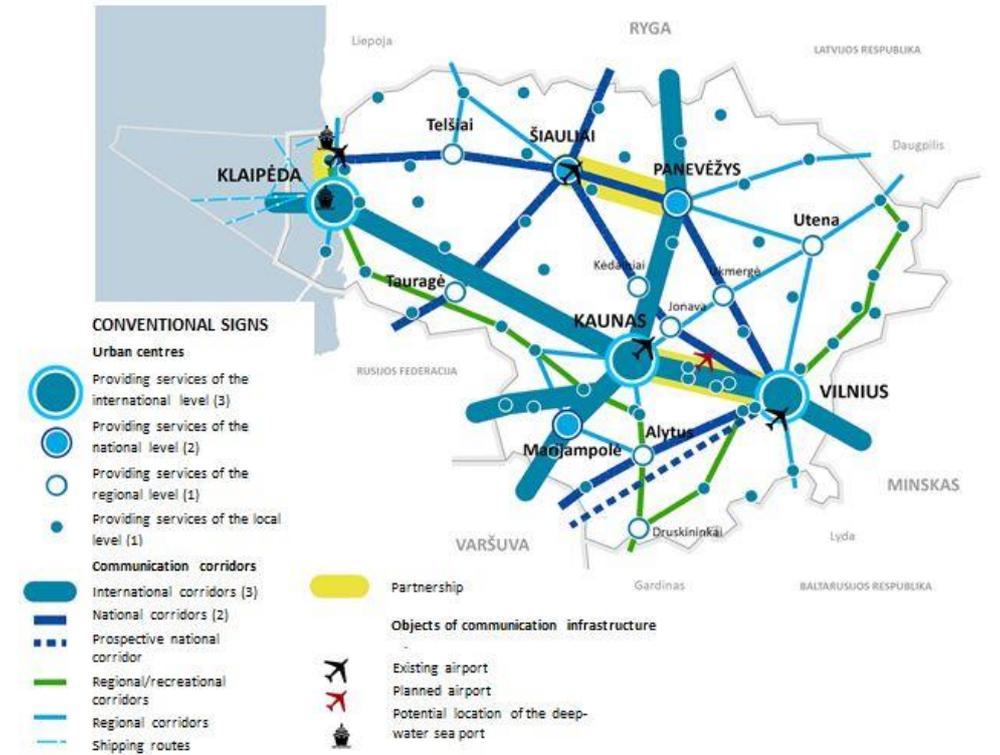
6. *There are three qualitative level mobility services available: 5 high levels (efficiency) mobility zones, eight intermediate (efficiency) mobility zones and the accessibility services (mobility as a right) zone^T.*

Development directions of the communication system

Alternative I

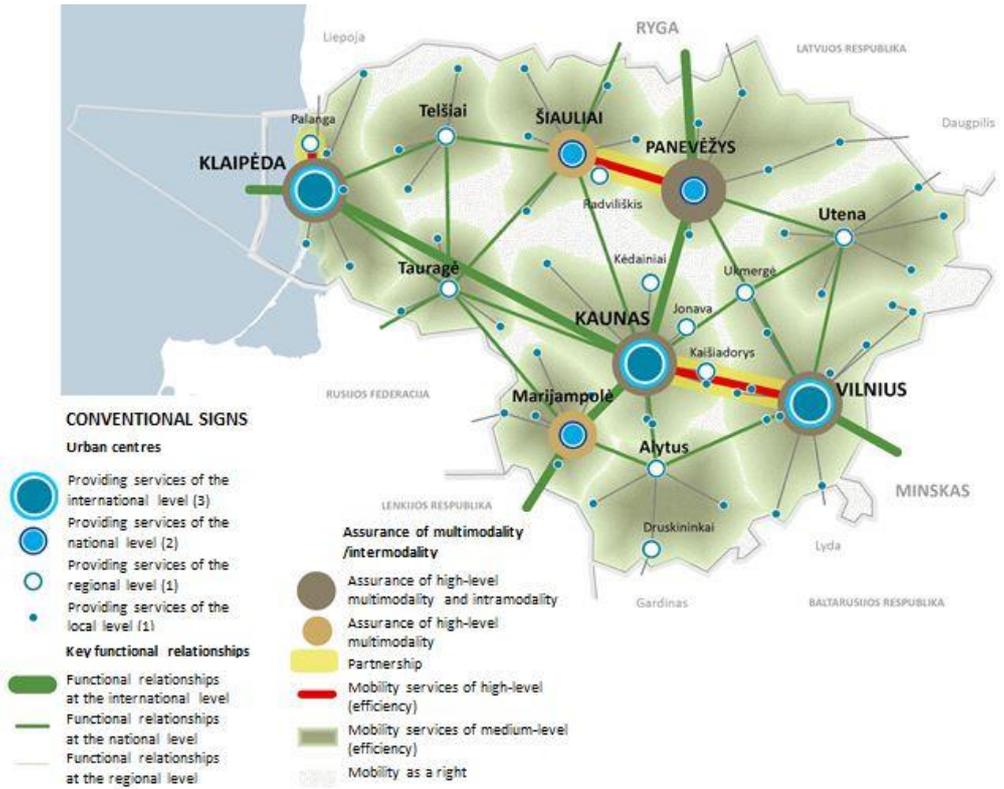


Alternative II

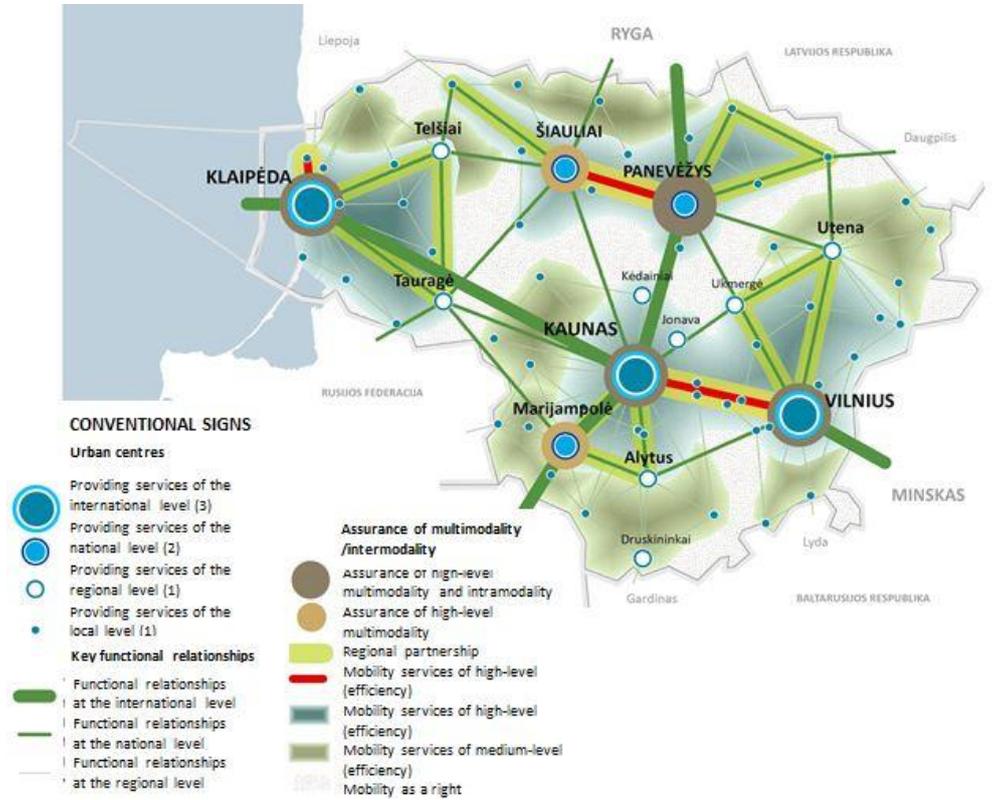


Organisation diagram of mobility services

Alternative I



Alternative II



Engineering systems

General directions of engineering system development at the international and national levels:

- *the transition to a low-carbon economy, increasing energy efficiency, promoting RES, alternative fuels and electrification in the transport sector, providing the necessary conditions for the development of clean energy production and so on;*
- *development of producing consumers;*
- *interconnection of the Lithuanian energy system with continental Europe (electricity and natural gas systems);*
- *development of liquefied natural gas (LNG) infrastructure;*
- *the transition to a circular economy, with priority given to reducing waste generation, efficient management of waste generated, based on the order of priorities in waste prevention and control, and preserving the value of raw materials;*
- *ensuring the quality and development of electronic communication services throughout the country;*
- *provision of engineering infrastructure, provision of drinking water, communication needs, wastewater management services at the lowest cost.*

ALTERNATIVE I	ALTERNATIVE II
<p>Re-investment is possible in the case of the first alternative solutions for an even distribution of public investments. Regions, where engineering infrastructure development is environmentally friendly/hygienic but have a low number of users, have higher infrastructure maintenance costs than an area with more users (e.g., district heating, drinking water, wastewater management).</p>	<p>The other alternative solutions will allow for a more efficient allocation of investment and cost burden. Possible challenges in implementing alternative solutions include the complexity of meeting international and national targets due to potential difficulties in administrative cooperation.</p>
ALTERNATIVE I	ALTERNATIVE II

Spatial economic structures

Regions are developing according to the existing administrative-functional division (counties), based on the principle of equitable areas, where public investments are distributed as evenly as possible on the territory of Lithuania and all necessary public services are concentrated in each region^T.

The objective of each region is to remain a centre of attraction for both citizens and businesses, thereby justifying its administrative

The network of major economic centres is developed through vertical and horizontal partnerships between urban centres, aiming at the provision of public services, regional transport, energy, engineering and other synergies in the utilisation of system nodes, resources and investments^T.

Regional development and planning processes should be based on specialisation, the clearing of competitive advantages, the pooling of

autonomy.

The main benefits of the first alternative for the economic environment are highlighted:

- the development of an international structure of industrial clusters and transport corridors and nodes;
- an evenly developed network of urban, infrastructure, communication and economic centres, creating as much territorial as possible equal conditions for residents and commercial activities.

The potential negative factors of the first alternative for the economic environment:

- maintaining such a network of urban centres can become complicated and economically inefficient due to urbanisation trends, changes in economic structure, technological revolution and its impact on agriculture;
- uneven starting positions in individual regions due to too limited or too similar competitive advantages or disadvantages; regions that lack competitive advantage are eventually programmed to become economically dependent and sustainable;
- the need for areas to concentrate the full range of public services and competition for public financial resources impedes specialisation and economies of scale, and remains a threat of duplication of functions or infrastructure in adjacent areas;
- The Rail Baltica railway will not reach Klaipėda port but will feed the ports of neighbouring countries in transit of goods. For this reason, the importance of Klaipėda port and added value may be undermined.

competences and the search for interregional synergies. The identification of synergies and partnerships at national or regional level contributes to more efficient use of public financial, administrative and human resources.

Advantages of the second alternative in terms of the economic environment:

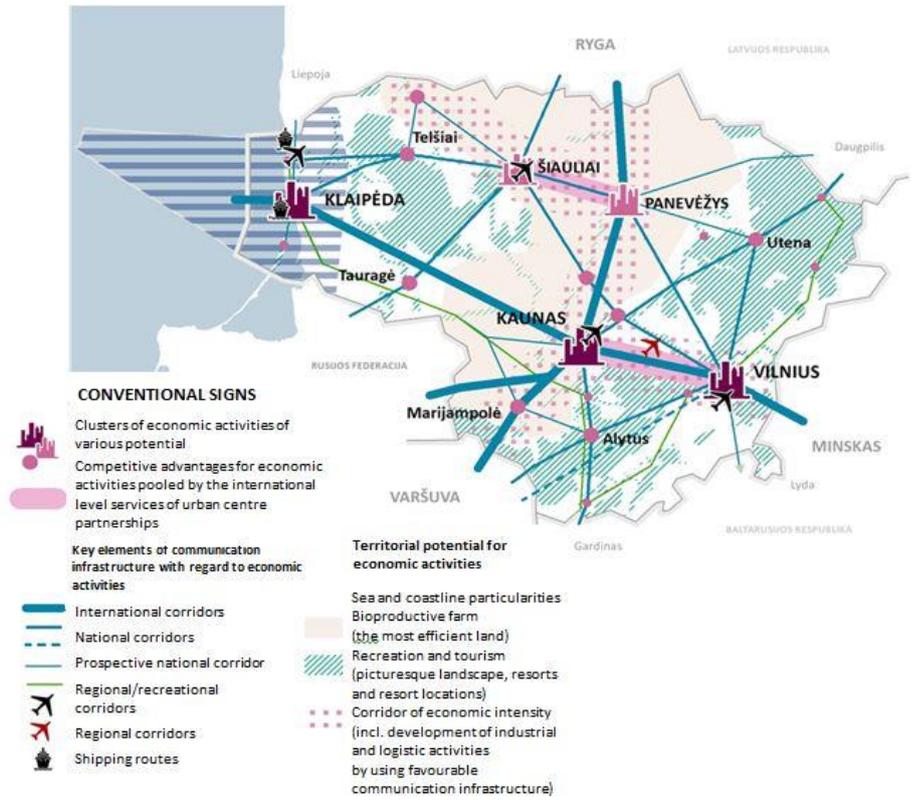
- the development of an international structure of industrial clusters and transport corridors and nodes;
- both vertical and horizontal partnerships between urban centres create opportunities for more significant economic development potential and more efficient use of public resources (including administrative ones);
- territorial planning based on such principles would reduce competition between regions for public financial resources;
- such a model would help to share functions, resources and infrastructure and avoid duplication in adjacent territories;
- such a model allows for greater flexibility in responding to changing demographics realities and the challenges of urbanisation.

The potential negative factors of the second alternative for the economic environment:

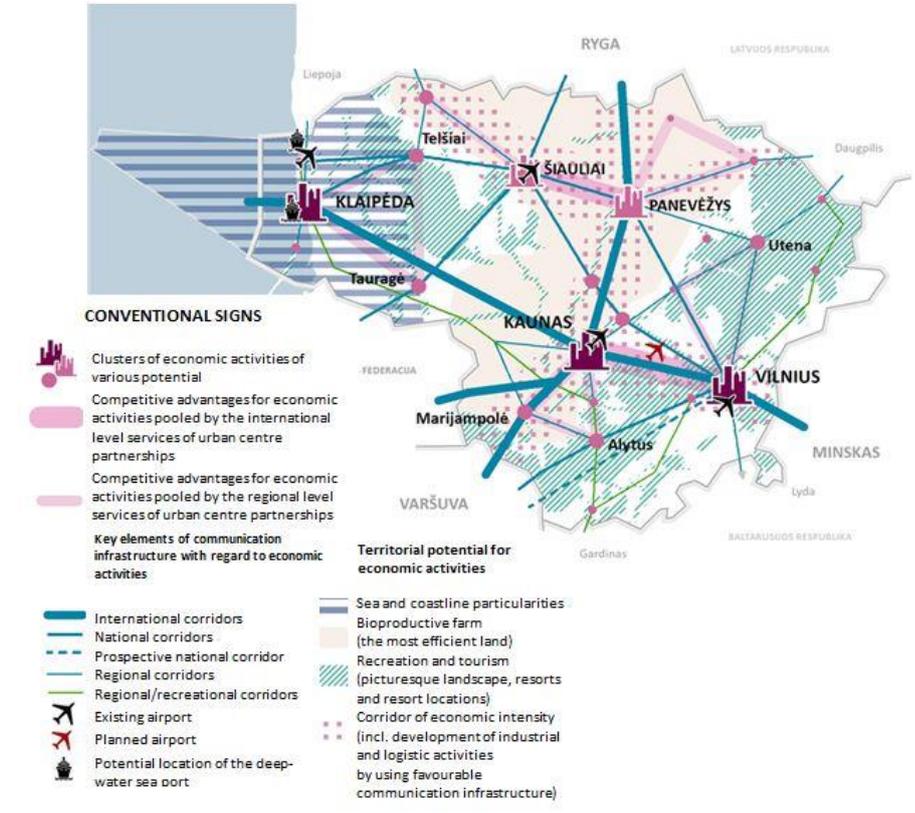
- more complex implementation, challenges and the need for political will to restructure regional funding and administration;
- The Rail Baltica railway will not reach Klaipėda port but will feed the ports of neighbouring countries in transit of goods. For this reason, the importance of Klaipėda port and added value may be undermined.

Economic systems

Alternative I



Alternative II



ALTERNATIVE I

ALTERNATIVE II

Sea and coastline spatial structures

Alternative I reflect the *status quo* – retaining the existing strategic approaches to the development of maritime areas and responding to the concrete solutions currently in place, intends to create favourable conditions for maximum development: *exploitation of marine mineral and energy resources, maximization of the development of the underwater energy network (providing for energy transfer both to land and to export to neighbouring countries by sea); to promote renewable energy production in all possible sea heights and to ensure the safety of navigation through the Lithuanian EEZ by providing a new transit route.*

Alternative II is more conservative than the first one, more in line with domestic needs, does not envisage more comprehensive development of the renewable energy sector (both domestically and with neighbouring countries), and does not consider establishing a transit shipping corridor. Other provisions remain identical to Alternative I, i.e. *ensure the preservation of natural values, reserve sufficient areas for the needs of state security, emphasise the need to legalise the exploration and use of mineral and energy resources at sea, and promote the protection of underwater cultural heritage.*

Ecosystem (an ecological compensation system)

The system of natural frameworks and protected areas is territorially reflective of the current situation, maintains existing strategic provisions for the development of these areas, and the directions are set out in this document and the National Landscape Management Plan.

Resource system

Extensification of the existing land use in the areas of intensive bio-production (active conversion of arable land to grasslands and pastures and reduction of forest use). The potential for additional income-generating recreation is being abandoned as part of a low-viable economic activity in intensively agrarian areas.

Compared to Alternative II, *a smaller part of the marine waters is intended for the protection of ecosystems.*

Only the system of recreational connections of international importance in the eastern and western part of the Republic of Lithuania is maintained and created.

Only the system of existing recreational centres of national and regional importance is maintained and further developed.

Taking into account the location of the individual natural and cultural values located in the territory and the landscape complexes of natural, cultural and visual value that unite them, this alternative involves the centres of recreational service of national and regional importance and the interconnected corridors of European and complementary linear recreational infrastructure of cross-border importance, which consistently enable better representation of natural and cultural heritage values, characteristic and distinctive landscape complexes in the territory of Lithuania:

- Corridors of recreational infrastructure of international and cross-border importance are envisaged, together creating significant Europe-wide recreational links including the neighbouring countries, which ensure the integration of areas of natural and cultural value into one system and at the same time create opportunities for the

demonstration and awareness of the most important natural and cultural values in the territory of Lithuania and intensified development of various recreational activities. These Europe-wide recreational corridors are distinguished: 1. EuroVelo route in the western part of Lithuania, covering the Curonian Spit and the mainland coast; 2. EuroVelo route in the eastern part of Lithuania, including the area rich in lakes and forests;

- The system of international importance is supplemented with recreational links of cross-border importance, which link natural and cultural values (recreational resources) localised on the territory of Lithuania with the resources located in the neighbouring countries: 1. Samogitian recreational connection connecting the most valuable natural and cultural objects and landscape complexes of Samogitian highlands; 2. Recreational link of Central Lithuania linking natural – cultural objects and landscape complexes located in Sudovian Plain, Central Lithuanian Plain, Eastern Samogitian Upland and Semigallian Plain; 3. East-West recreational link encompassing natural and cultural objects with exceptionally high recreational potential and landscaping complexes connecting them.

- Considering the importance of recreation centres, the significance of the natural and cultural heritage values they contain in the context of other recreational centres and the State as a whole, and their potential for development, the development of the system of recreation centres of national and regional importance is planned, by changing their importance or adding new recreational centres of local influence: the group of the recreation service centres of national importance (Vilnius, Trakai, Kaunas, Klaipėda, Palanga, Druskininkai) is supplemented by Birštonas and Neringa; the group of the recreation service centres of regional importance is completed by Kėdainiai and Molėtai.

Summary of the conceptual solutions of the second alternative:

The current usage rate of bio-production areas is maintained by intensifying the Natural Carcass in

their most geo-ecologically sensitive areas. These activities are combined with measures of good agricultural practice. Various recreational activities are being developed in areas of intensive agrarian business that provide additional income. Compared to Alternative I, *a more significant part of the marine waters is intended for the protection of ecosystems.*

The system of recreational connections of international importance adds three additional recreational links of cross-border importance.

The system of recreation centres is supplemented by two recreational centres of national and two regional importance.

Spatial development directions of territories

Preliminary solutions of the spatial development concept of territories are focused on:

1. *Preservation and enhancement of the ecological-compensatory potential of the area by forming a coherent and functional GC system;*
2. *Ensuring biodiversity expression and enrichment;*
3. *Development and representation of the natural and cultural values and identities of the country representing the system of protected territories;*
4. *Protection of valuable natural and cultural landscape complexes;*
5. *Formation of the geo-ecologically optimal structure of the relatively natural, agrarian, urbanised and marine landscape.*

Expected conceptual directions of development of parts of the territory (sustainable, supportive and developmental type)^T are closely related to the existing and planned protection and utilization regime of the territory, which is mainly determined by the natural conditions of individual parts of the area, as grafted or targeted because of the nature and intensity of planned use and protection. Based on these assumptions, the south-eastern region and the western part of the territory of the Republic of Lithuania (Samogitian highlands) are expected to be of a *sustainable type*, where, in view of the predominantly vivid landscape that is attractive both naturally and culturally, the decrease in the intensity of use of land is planned, converting it to the extensive farming and the increase in the recreation and conservation importance. *Supportive type* habitats are localised in parts of the area between hilly highlands and plains that focus on sustainable economic activities while preserving the ecological stability of the regions, combining them with recreation and conservation where possible. *Developmental type* habitats include the most spatially active part of the territory (Northern, Central and South-western Lithuania), which is developed in the perspective of intensive use, restoring and maintaining ecological stability, increasing the geo-ecological potential of the system parts of the natural carcass and optimal conditions for the expression and restoration of biodiversity.

Functional priorities of use of territories

Based on the first alternative of functional priorities for land use, it is presumed that in the current intensive *bio-productive areas* (North-

Based on the second alternative on the functional priorities of the territory use, it is presumed that *the current intensity of use of bio-productive*

Central and South-Western Lithuania and other agronomically intense parts of the territory), in order to maintain the natural production capacity, satisfactory environmental components and minimum biodiversity possibilities, **the extensification of land use is required** (active conversion of arable land to grasslands and pastures, and reduction in intensity of forest use), which, without the implementation of proactive and intensive measures to improve the ecological status of the agricultural landscape, becomes the only way to stabilize the unsatisfactory environmental condition of the areas. Under this alternative, areas with intensive agricultural activities are abandoned as potentially secondary economic activities with little potential for additional income. Assumptions made under this alternative:

- A. *The realisation of the latter alternative will not have a significant positive or negative impact on the viability of urban areas. Only by promoting and developing various types of recreational activities complementary to the main economic activities would the preconditions be created for the increase of the rural population and the vitality of the agricultural areas in general, or at least to stabilise the negative changes.*
- B. *According to this alternative, providing the intensive formation of natural carcass components in the most ecologically sensitive areas of the agrarian landscape in heavily cultivated fields would create realistic preconditions for restoring and maintaining the productivity of agricultural land and ecological stability of the agricultural landscape while potentially increasing the economic benefits of these activities.*
- C. *The positive side of this is the increased ecological stability of agricultural areas and the real prerequisite for the emergence and increase of biodiversity of agrarian territories in a targeted and intensive way.*
- D. *The development of Lithuania and all the countries of the Baltic Sea region is closely linked to the sea, which has a particularly significant influence on the formation of economic, social and political*

areas (northern-central and south-west Lithuania and other agronomically intensive parts of the territory) **is maintained**, and in order to maintain their production potential, good ecological condition of environmental components and formation of favourable conditions for the expression of biological diversity, it is necessary to develop the **intensive ecological compensation systems (Natural Carcass) networking in the most geo-ecologically sensitive areas of agrarian ecosystems, combining the latter with good agricultural practices**. According to this alternative, various recreational activities are being developed in areas of intensive agricultural activity that would possibly provide additional income.

Assumptions made under this alternative:

- A. *The realisation of the latter option will not have a significant positive or negative impact on the viability of urban areas. Only the abandonment of recreational activities complementary to the main economic activities is a possible precondition for the decline of the rural population and the overall viability of agricultural areas.*
- B. *According to this alternative, in areas with high agricultural use, conversion of arable land (arable land – grassland pasture) would create preconditions for maintaining the productivity and productivity of agricultural land, but at the same time potentially decreasing the economic benefit from these activities.*
- C. *The positive side of this is the increased ecological stability of agricultural areas and the real prerequisites for the emergence and increase of biodiversity of agrarian territories in a significant way.*
- D. *The development of Lithuania and all the countries of the Baltic Sea region is closely linked to the sea, which has a particularly significant influence on the formation of economic, social and political environment. Favourable growth drivers for the Baltic Sea Region can make this region one of the critical macro-regions for growth in the 21st century in the EU.*

The functional zone of the territory, which is

environment. Favourable growth drivers for the Baltic Sea Region can make this region one of the critical macro-regions for growth in the 21st century in the EU.

The functional zone of the territory, which is related to maritime shipping and fishing, consists of the following subzones^T:

(1) The priority groups for deconcentrated offshore development in the functional area are commercial fishing, aquaculture, sea lanes, power transmission and telecommunication lines, and other economic activities. These activities may include the development of mineral resources, the installation of renewable energy (wind, waves, currents, etc.) parks and their accessories, and the preservation of marine space for other, currently unknown, activities.

(2) The priority groups of activities in the functional area of renewable energy production are installation of renewable energy (wind, wave, currents, etc.) parks and their accessories, engineering systems of power supply structures (transformers, etc.) and other engineering equipment. Construction, power and telecommunication lines. Other activities may also be developed in the background: commercial fishing, aquaculture and other economic activities that do not interfere with priority activities, and the extraction of minerals.

(3) The priority groups of businesses in the functional area of fast shipping are sea lanes, port raids and anchorages, pipelines, energy and telecommunication lines that are eco-friendly in nature. Other activities developed in the area include commercial fishing, extraction of minerals, removal of excavated soil, marine space reserved for other economic activities not known today, without interfering with priority activities.

(4) The priority groups of activities in the functional area for military exercises and the protection of offshore ecosystems are eco-friendly activities, national defence activities, commercial fishing. These activities may be accompanied by other activities such as mining and recreational activities.

(5) Within the mixed-use functional area, priority shall be given to the following groups of activities: renewable energy production, pipelines, power and telecommunication lines, and other engineering applications. Other activities are being developed in this area: excavated soil

related to maritime shipping and fishing, consists of the following subzones^T:

(1) The priority groups for deconcentrated offshore development in the functional area are commercial fishing, aquaculture, sea lanes, power transmission and telecommunication lines, and other economic activities. These activities may include the development of mineral resources, the installation of renewable energy (wind, waves, currents, etc.) parks and their accessories, and the reservation of marine space for other, currently unknown, activities.

(2) The priority groups of businesses in the functional area of renewable energy production are installation of renewable energy (wind, wave, currents, etc.) parks and their accessories, engineering systems of power supply structures (transformer, etc.) and other purpose engineering equipment. Construction, power and telecommunication lines. Other activities may also be developed in the background: commercial fishing, aquaculture and other economic activities that do not interfere with priority activities, and the extraction of minerals.

(3) The priority groups of activities in the functional area of fast shipping are sea lanes, pipelines, energy and telecommunication lines that are eco-friendly in nature. Other activities developed in the area include commercial fishing, extraction of minerals, marine space reserved for other economic activities not known today, without interfering with the priority activities.

(4) The priority groups of activities in the functional area for military exercises and the protection of ecosystems are eco-friendly activities, national defence activities, shipping, commercial fishing. These activities may be accompanied by other activities such as mining and recreational activities.

(5) Within the mixed-use functional area, priority shall be given to the following groups of activities: renewable energy production (from waves and currents), pipelines, power and telecommunication lines, and other engineering applications. Other activities are being developed in this area: excavated soil removal, recreational activities, development of aquaculture.

(6) Within the port development functional area, priority shall be given to the following groups of activities: installation of seaports, small craft ports, marinas, navigation facilities, other

removal, recreational activities.

(6) Within the port development functional area, priority shall be given to the following groups of activities: installation of seaports, small craft ports, marinas, navigation facilities, other engineering and hydro-technical structures, sea lanes, port raids and anchorages, pipelines, water supply, sewage disposal, energy, and telecommunication lines. Other activities with ecosystems-friendly nature are developed in this area, as well as recreational activities, commercial fishing, water abstraction for drinking or production water, wastewater discharge, and other economic activities.

(7) The priority groups of activities in the functional area for the protection of coastline ecosystems are eco-friendly activities, commercial fishing, recreational fishing, water sports, recreation, tourism, and other recreational activities. In assessing and fostering the conservative nature of the area, small harbours and marinas associated with priority activities, energy transmission lines and military exercises may be established in the area.

engineering and hydro-technical structures, sea lanes, port raids and anchorages, pipelines, water supply, sewage disposal, energy, and telecommunication lines. Other activities with ecosystems-friendly nature are developed in this area, as well as recreational activities, commercial fishing, water abstraction for drinking or production water, wastewater discharge, and other economic activities.

(7) The priority groups of activities in the functional area for the protection of coastline ecosystems are eco-friendly activities, commercial fishing, recreational fishing, water sports, recreation, tourism, and other recreational activities. In assessing and fostering the conservative nature of the area, small harbours and marinas associated with priority activities, energy transmission lines and military exercises may be established in the area.

Strategic objects

Alternative solutions in respect of strategic objects are similar.

The relevant resolutions of the Seimas of the Republic of Lithuania and the Government of the Republic of Lithuania to recognise the economic projects of national importance projects are partially listed below (an extensive list is provided in the report):

- Plans for the modernisation of the district heating sector in Vilnius and Kaunas by installing cogeneration power plants using local and renewable energy sources;
- Installation of industrial parks (in Šiauliai, Kėdainiai, Visaginas, Marijampolė, Panevėžys, Alytus, Naujoji Akmenė and elsewhere);
- Creation of industrial park in Kruonis PSHP;
- Development of free economic zones (in Kaunas and Klaipėda);
- A project of the public logistics centre of Vilnius and Kaunas.
- Part of the project 'Gas interconnection Poland-Lithuania' in the territory of the Republic of Lithuania;
- Part of the plan of the East-West transport corridor in Lithuania (Klaipėda State Seaport, roads and railway infrastructure complex);
- Development of broadband electronic communication networks in Lithuanian rural areas;
- Project 'Rail Baltica';
- Plan for the preparation of communication on roads of national and local importance for the transport of heavy and bulky cargo for the construction of a new nuclear power plant on the route Klaipėda–Telšiai–Šiauliai–Panevėžys–Visaginas;
- Project for optimisation and preparation of electricity transmission network of North-east Lithuania for the connection of the power system of the Republic of Lithuania to the grids of

Continental Europe for synchronous operation.

The relevant resolutions of the Seimas of the Republic of Lithuania to recognise the projects of exceptional national importance:

- Project 'Via Baltica';
- Project 'Rail Baltica';
- Part of the plan of the East-West transport corridor in Lithuania (Klaipėda State Seaport, roads and railway infrastructure complex);
- A project of expanding military training areas and military training territories of the Lithuanian Armed Forces in Jonava district municipality, Rukla eldership and Švenčionys district municipality, Pabradė eldership.

Below the *new planned objects are proposed for which it is expedient to grant the status particular national importance.*

- Project 'Connection of the power system of the Republic of Lithuania to the grids of Continental Europe for synchronous operation' (recognized as the project of exceptional national importance by the Law on Connection of the power system of the Republic of Lithuania to the grids of Continental Europe for synchronous operation, approved by the Resolution No XI-2052 of the Seimas of the Republic of Lithuania of 12 June 2012);
- The project of connection of offshore wind farms to the mainland;
- About 12 000 ha reserve territory for the national defence system in the western part of the area of Lithuania (preference is given to the municipalities of Šilalė, Kelmė, Telšiai or Rietavas region);
- Up to 900 ha reserve territory for the national defence system in Klaipėda County, Kairiai;
- Planned airport;
- External deep-sea port.

4. RECOMMENDATIONS FOR THE IMPLEMENTATION OF THE CONCEPTUAL SOLUTIONS

A preliminary plan for the implementation of the conceptual solutions is proposed for the development and implementation of the conceptual visions of the Comprehensive Plan of the Territory of the Republic of Lithuania (hereinafter referred to as the 'CPRL') for 2050 (to be specified during the solutions stage), including potential synergies between Lithuanian strategies, and coalitions in the partnership and national level. The legal and practical measures for assurance of the integrity of the conceptual solutions, and urban development is proposed to implement the theoretical solutions of the CPRL. Alternatives to the spatial development of the country have been prepared and discussed in detail (in the third report). Their concepts are different, and so are how they are implemented.

The first alternative is based on the steady development of the entire country with ten regional centres. Its implementation would require the improved systemic and legal environment, and one of the biggest challenges – the allocation of financial resources to local development and maintenance of equal quality of life.

As opposed to the steady development, the second alternative proposes partnership principles that are active within the current structure of the country by creating conditions for a more flexible adaptation to the changing demographic situation, optimising resources and financial resources required to achieve a high quality of life in the whole territory of the country. In case of this alternative, a targeted systematic concentration of the country's investment should be focused on the partner entities in areas and territories which, considering their strengths and specificities, can bring the most significant benefits and returns not only to the specific location but also to the region and the State. The implementation of the second alternative would require greater involvement of all groups (state, municipal institutions, business, society) than the former, but would, in the long run, bring more significant benefits to the State and significantly contribute to the stability and prosperity of the country.

One thing is clear: whatever option we choose, the State policy needs to be updated, aimed at strengthening national identity, increasing competitiveness, regional partnerships and promoting national coalitions, mitigating climate change and adaptation to climate change, strengthening the national security.

The fourth report lays down the implementation principles of the conceptual framework of the CPRL, including the planned measures and actions, the necessary legal developments to be considered, and the proposal of legal and practical integrity plan of the conceptual framework of the CPRL. The creation and realisation of the legal and practical plan are of particular importance because the Comprehensive Plan of the Territory of the Republic of Lithuania is prepared in parallel with the National Development Plan (NDP), which combines the national development strategies. Recommendations on the specification of the conceptual solutions of the CPRL are prepared for the solution-specification stage. The theoretical solutions that are subject to proposals for specification at the solution-specification stage are distinguished. Part IV of the report is of particular importance – recommendations for improving the indicator system. In the next step of the Comprehensive Plan of the Territory of the Republic of Lithuania (solution-specification), it is necessary to use the method of indicators developed at the current stage and developed at the conception stage, which will be valuable in the future, particularly in the context of the monitoring of the Comprehensive Plan.

The proposed legal and practical integrity plan of the conceptual framework of the CPRL (proposals for strategies)

Recommendations for the implementation of the conceptual framework of the CPRL by 2050 to ensure the smooth operation of the internal functioning of the systems and elements, preserve and highlight the country's identity in the European context, and to develop the foundations of a competitive State. The actions and tools needed to realise the vision of the conceptual framework are noted, as well as the partnerships needed to implement the solutions. There is also a discussion on possible amendments of the national strategy documents and other legislation or the need for a new law. The principles of implementing the tasks are delivered, without elaboration to specific legal clauses.

Recommendations on the specification of the conceptual solutions of the CPRL for the solution-specification stage

The conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania for 2050 contains the directions of spatial development, lists the principal elements and structures of the urban system and identifies measures and actions to achieve the goals of the conceptual framework, based on the conceptual (generic) solutions. The conceptual framework of the CPRL assesses the long-term spatial development of the territory of the Republic of Lithuania. The evaluation is inherently conceptual. Whereas the general solutions-specification stage covers a period of 10 years; therefore, the conceptual solutions elaborated in the solution-specification stage can be arranged more precisely and more clearly, including the spatial location of some of them. It should be noted that for the integrity and logical analysis sequence of the CPRL, it is essential to ensure the transfer and elaboration of the conceptual solutions formulated in the theoretical framework at the solution-specification stage of the CPRL.

This chapter includes the recommendations on the specification of the conceptual solutions of the CPRL drafted for the solution-specification stage. Some of the overall solutions of the theoretical framework referred to in Alternative I and Alternative II are different, so further elaboration will depend on which alternative is accepted. The global conceptual solutions include the essential elements of the spatial system of the Lithuanian territory considered in the CPRL: polycentric hierarchical urban structure, compact city principles, public service provision principles, regional development directions, transport infrastructure system, mobility service efficiency zones, deep water port infrastructure, energy and engineering infrastructure, agrarian ecosystems with the geo-ecological potential, relatively natural ecosystems, etc.

Recommendations for improving the indicator system

The developed conceptual solutions, detailed at the solution-specification stage, must be measured to evaluate the positive and negative changes in the implementation/non-implementation of the solutions and to decide whether to develop or change the chosen principles and/or ways of their implementation. Analysing the values of indicators can be of help in identifying the emerging problem situations, as well as synergies that can be useful in finding best governance practices, monitoring the success and impact of sustainability and investment.

The indicative indicators presented in this chapter have been selected by the authors of the conceptual framework as initial information for the design and development of the system indicators for monitoring the Comprehensive Plan of the Territory of the Republic of Lithuania. It is noted that the signs have to cover both quantitative and qualitative parameters. Taking into account the problem of data scarcity and the need for new data identified at the stage of

analysis of the current state of the Comprehensive Plan of the Territory of the Republic of Lithuania, completely new indicators are submitted, which are not currently collected. The author also highlights the level of detail of the data, depending on its statistical level (state (national), regional, municipal, residential or smallest mathematical field) to identify not only general trends but also the locations of the country with positive or negative changes.

CONCLUSIONS

1. The territorial planning document of the highest level – the conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania (CPRL) has been prepared, based on which the spatial functional development solutions of the State territory will be drafted. All parts of this document form the foundation of the entire regional policy of the Republic of Lithuania, the national planning system and the output data for the lower-level territorial planning documents.
2. The planned territory is the land and sea territories of the Republic of Lithuania, including the territorial sea of the Republic of Lithuania, as well as territories where Lithuania exercises exclusive sovereign rights, i.e., the contiguous zone and the exclusive economic zone (EEZ), including the continental shelf.
3. The planning document of the State territory is synchronised with the strategic documents system of the Republic of Lithuania, which is arranged by the National Development Plan (NDP), and its realisation is linked with the long-term development plans of the State.
4. The long-term conceptual solutions are planned for the outlook until 2050 on the basis of values: sustainable development principles, the Constitution of the Republic of Lithuania and other overarching objectives of the State and its people to strengthen statehood, maintain and develop the country's identity, increase competitiveness in the European and global context, and broaden and deepen planning traditions.
5. The prepared territorial planning document is especially vital for the regional development of Lithuania as a progressive European state, determining the mandatory priority provisions of the territory use and security requirements.
6. Two alternatives of the spatial development of the national territory are prepared, having the common objective to create the best perspective spatial model of the State, to provide for optimal performance of mechanisms.
7. The basis of both alternatives is the urban structure of the polycentric territory of the country, which is being developed and improved by maintaining and fostering the value system of natural and cultural heritage. The country's spatial structure is designed in the alternatives applying two different principles: individual equivalent centres and centre partnerships groups.
8. Solutions at the international level of the urban structure remain the same as in both alternatives: three metropolitan centres Vilnius, Kaunas, Klaipėda; two regional development centres – Šiauliai and Panevėžys. In both cases, the urban centre partnerships are proposed in the provision of international-level services.
9. The first alternative is based on the continuity of the CPRL with the ten critical regional centres (regions); the spatial model of the State is based on, supplemented and adjusted to the State development trends that were identified during the preparation of the current stage.
10. In the first alternative:

- 10.1. the existing spatial structure of the country is developed with ten regions (centres) – Vilnius, Kaunas, Klaipėda, Šiauliai, Panevėžys, Alytus, Marijampolė, Utena, Telšiai, and Tauragė.
- 10.2. Solutions are implemented by consistently maintaining the continuity of the planning of the territory of the Republic of Lithuania.
- 10.3. A priority is given to the principle of autonomy of equitable regions, whereby public investment in the territory of Lithuania is distributed, and services provide as evenly as possible, and a wide range of essential services is concentrated in each region.
- 10.4. The most evolutionary development of the Lithuanian territory is planned.
11. The spatial development of the State referred to in the second alternative is based on the partnerships between the territorial components and subjects of the country and their synergy. Cooperation of regions and municipalities (synergy) must create preconditions for the implementation of the principles of sustainable development, ensure the smooth functioning of the country's internal systems and elements, preserve and emphasise the country's identity, develop the foundations of a competitive state.
12. In the second alternative:
 - 12.1. Five clusters of territorial partnerships are modelled, creating new synergies and ensuring stability in the country: Vilnius-Utena-Ukmergė; Kaunas-Marijampolė-Alytus; Klaipėda-Tauragė-Telšiai; Šiauliai-Mažeikiai; Panevėžys-Biržai-Rokiškis. These five partnership groups can serve as a basis for the formation of the regions and the creation of shared activities.
 - 12.2. The solutions upgrade the established practice of the planning system of the territory of the Republic of Lithuania, and systemic partnerships are implemented.
 - 12.3. A targeted concentration of the country's investment is applied, focusing on the partner entities in areas and territories which, considering their strengths and specificities, can bring the most considerable benefits and returns not only to the specific location but also to the region and the State.
 - 12.4. The solutions are implemented in stages, by restructuring the standard and legal relations of the state institutions, self-governing bodies and public to create community systems.
13. To achieve the formulated vision (viable urban structures, sustainable ecosystems, efficient bio-productive territories), two different alternatives for the development of the region of the country are proposed for the perspective of 30 years:
 - 13.1. **Evolutionary** replacement, by maintaining the continuity of the planning of the area of the Republic of Lithuania;
 - 13.2. **Restructuring** alternative, by upgrading the existing planning system of the country's territory through systematic partnerships.
14. The implementation of the conceptual framework of the CPRL is a long-term aspiration of the State to create a state of prosperity in this challenging period of geopolitical processes, climate change, 4th industrial revolution, demographic changes and other challenges that the country is facing.
15. The implementation of the conceptual framework of the CPRL is inseparable from the establishment of a clear, accurate and methodologically sound system

for monitoring the implementation of the Comprehensive Plan, and the creation of legal principles for the modification, adjustment and improvement thereof.

16. The conceptual framework of the Comprehensive Plan of the Territory of the Republic of Lithuania is the basis for the development of actual solutions, the specificity and viability of which for the perspective of 2030, as well as their interface with the country's strategic documents and budgeting principles can ensure the sustainable development of the country's territory in the short term.



LIETUVA 2030

bendrasis planas