

SUPER – Sustainable Urbanization and Land-use Practices in European Regions
Croatia – Spin-off

Original

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APPLIED RESEARCH SPIN-OFF //

**SUPER – Sustainable Urbanization
and Land-use Practices in European
Regions**

Lithuania – Spin-off

Final Report // April 2021

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Abbreviations

CPRL	Comprehensive Plan of the Republic of Lithuania
ESPON	European Spatial Planning Observation Network
FEZ	Free Economic Zones
GVA	Gross Value Added
ITI	Integrated Territorial Investment
LAGs	Local Action Groups
SUMPs	Sustainable Urban Mobility Plans (SUMPs)
SUPER	Sustainable Urbanization and land-use Practices in European Regions

Executive summary

This SUPER spin-off study was conducted at the request of the Ministry of Environment of Lithuania. Its aim is to integrate the knowledge contained in the *SUPER Guide to Sustainable Urbanization and Land Use* into domestic policymaking. More specifically, the Ministry of Environment of Lithuania seeks support for the implementation of the Comprehensive Plan of the Republic of Lithuania (CPRL). In addition to the evidence base amassed in the SUPER project, new material was gathered on Lithuania to facilitate application. This spin-off offers an opportunity to test the usefulness of ESPON SUPER for policymaking.

Between May and July 2020, the ESPON EGTC, the service providers and the stakeholder (the Lithuanian Ministry of the Environment), identified a series of policy objectives to investigate during the spin-off. The research activities officially started in September 2020 and were concluded in February 2021.

A first step in the process was to understand the territorial and institutional context. This was done by performing a literature review of academic and other sources on the Lithuanian situation, including the ESPON COMPASS country reports. In addition, quantitative research was conducted to describe and understand the main socio-economic, territorial, and morphological land-use transformations occurring over the last two decades. Using SUPER data on land use, a series of maps, tables and charts were produced that display the socio-territorial transformation of the country and identify key trends. This analysis revealed, for example, that Lithuania is, by European standards, relatively non-urban. It also faces significant demographic, economic and environmental, and land-use challenges, although with significant differences between counties. Nevertheless, urban development in the majority of counties continues to increase in the face of demographic and economic decline (the population of some counties shrunk by over 30% since 2000). Finally, over 12,500ha of agricultural land became nature in the 2000-2018 period. The institutional analysis revealed that Lithuania has a number of tools that can promote sustainable urbanization and land use, but that contradictory policies are also present, particularly with respect to housing.

A second step regarded an in-depth analysis of interventions. Together with Ministry officials, key actors from different sectors and planning levels were identified as potential interview partners. Eight interviews with national and local stakeholders were performed to deepen understanding of the operation of interventions worked within the Lithuanian context. Afterwards, a selection of relevant interventions from the SUPER database was made that provide lessons and insights from elsewhere in Europe. Conclusions and recommendations were then drawn up by linking together general recommendations of the ESPON SUPER project and the insights gained from the territorial and institutional analyses and the conducted interviews. Finally, the draft conclusions and recommendations drawn up by the project team were tested in a focus group workshop.

This spin-off generated numerous conclusions and recommendations to ensure sustainable urbanisation and land-use, particularly with respect to the CPRL. These are structured as a list of potential interventions and policies for decision makers and policy makers at the national and local levels.

For **national decision makers**, the research offered the following recommendations:

- (1) Take a collaborative approach. An inclusive discussion that takes a long-term perspective on sustainable land-use should occur throughout the country, involving stakeholders active at the different territorial levels and within the public and private sector and civil society.
- (2) Use open and coordinated implementation mechanisms. This can be done by drawing up the 'rules of the game' and by establishing clear protocols and a common set of concepts regarding sustainable land use.

For **national policy makers**, the research offered the following advice:

- (1) Interventions may have side effects. Policy initiatives (and especially those of a more sectoral nature) sometimes cause unforeseen and undesirable effects on urbanization and land-use. To avoid this, ex-ante territorial impact assessments (TIA) can be carried out to detect potential effects.
- (2) Incentives and disincentives can impact sustainable urbanization. For instance, brownfield regeneration can be supported by discouraging greenfield development (e.g. imposing development fees).

- (3) Monitoring and assessment are crucial for reflexive policymaking. Establishing measurable and realistic targets makes it easier to monitor performance on sustainable urbanization and land-use.

Local decision makers are charged with realizing central political priorities while at the same time addressing local needs and priorities. Local decision makers should be aware of the considerable territorial differences within the country. Accordingly, they should:

- (1) Contextualize objectives and policies. Because different territories face different problems and have different potentials, successful initiatives in one territory may fail elsewhere.
- (2) Create conditions for place-based political cooperation.
- (3) Be open to and supportive of public participation. European experiences have shown that public participation is a key factor for improving the sustainability of spatial development. Effective and genuine public participation can trigger synergies between different types of knowledge and actors.

Local policy makers act at the nexus between the policy arena where spatial planning objectives are formulated and the project arena where the actual transformation of land to new uses takes place. Local policy makers play a crucial role since their everyday activities shape urbanization dynamics. In this context, they should:

- (1) Create a package of planning instruments. Adequate political and financial support is crucial for implementation. Planning tools at the local level should be better connected to the municipal strategic-development plan.
- (2) Be aware of unwanted effects and trade-offs. This can happen when (a) instruments are too rigid and technical, (b) they are not based on a clear long-term vision (c) they are not supported by adequate public engagement.
- (3) Sustainability dimensions should be integrated by incorporating local interventions into medium and long-term strategies.
- (4) Institutional capacity building matters. The CPRL will benefit from the mobilization and empowerment of civil servants and experts within the institutions relevant to its implementation.

In conclusion, the Lithuanian case study clearly shows that every territorial context contains specific land-use challenges that require tailored actions. When zooming out, however, a number of land-use principles and attitudes come into view that seem valid in most cases and contexts. Applying such sustainable urbanisation principles is a responsibility that concerns all actor categories: government, the business sector as well as civil society. The most successful examples developed elsewhere in Europe demonstrate that a well-balanced representation of interests helps to achieve more sustainable urbanization, but when only selected interests are taken into account, results are often more controversial.

1 Introduction

The ESPON Sustainable Urbanization and land-use Practices in European Regions (SUPER) project provides recommendations on how sustainable land use can be promoted and unsustainable urbanization can be avoided, reduced and/or compensated in Europe, its cities and regions. More in particular, the project:

- provided a conceptual framework to understand urbanization and land-use dynamics
- gathered and analysed evidence on urbanization and land-use developments within the ESPON space in the 2000-2018 period
- gathered and analysed evidence on policy interventions, including European Union policies, and their relative success and sustainability
- gathered and analysed evidence on how interventions affect land-use practices through case study research within a wide diversity of territorial contexts
- drew up a comprehensive sustainability assessment framework and applies this to three urbanization scenarios for 2050 (compact, polycentric, and diffuse).

This SUPER spin-off study was conducted at the request of the Ministry of Environment of Lithuania. Its aim is to integrate the knowledge presented in the *SUPER Guide to Sustainable Urbanization and Land Use* in their policymaking. More specifically, the Ministry of Environment of Lithuania seeks support for the implementation of the Comprehensive Plan of the Republic of Lithuania (CPRL). In addition to the evidence base of the SUPER project, new material was gathered on Lithuania to facilitate knowledge application. This spin-off offers an opportunity to test the usefulness of ESPON SUPER for policymaking. Specifically, the following questions were posed by the Ministry of Environment of Lithuania to the project group:

1. What does the current Lithuanian land use look like?
2. Which externalities play a significant role in the Lithuanian context?
3. How to deal with contradictory policies?
4. What successful instruments to contain urban sprawl could be used in the CPRL?
5. What are the policy implications for CPRL (instruments to contain urban sprawl, success factors)?
6. What specific insights from the SUPER project could be used for the further development of the CPRL?

The present report provides answers to these questions. Chapter 2 discusses the approach and methodology taken to answer the above questions. Chapter 3 examines the territorial and institutional context in Lithuania. Chapter 4 contains a comparative analysis of Lithuanian interventions versus similar examples elsewhere in Europe. Chapter 5 contains conclusions and recommendations for Lithuanian decisionmakers and policymakers.

2 Approach and methods

2.1 Definition of scope and objectives

Between May and July 2020, the ESPON EGTC, the service providers and the stakeholder (the Lithuanian Ministry of the Environment), identified a series of policy objectives to investigate during the spin-off research. The spin-off officially started in September 2020 and focused on supporting Lithuanian authorities at different territorial levels to address sustainable urbanization and land use by elaborating a series of policy recommendations aimed at the implementation of the Comprehensive Plan of the Republic of Lithuania (CPRL) and other policy actions.

2.2 Survey activities

2.2.1 Territorial analysis

Quantitative research was conducted to describe and understand the main socio-economic, territorial, and morphological land-use transformations occurring over the last two decades. Using SUPER data on land use, a series of maps, tables and charts were produced that display the socio-territorial transformation of the country and identify key trends.

2.2.2 Institutional analysis

One of the first tasks was to draw up a review of the literature to familiarize the project team with the Lithuanian situation. This included academic book chapters, articles, conference papers and statistical data as well as an analysis of the ESPON COMPASS country reports on Lithuania. The search was expanded to include an analysis of norms, laws and amendments concerning land use in the country.

2.2.3 Identification of key actors

Together with the Ministry of Environment, a series of key actors from different sectors and planning levels were identified to guide the selection of interview partners. Care was taken to: (1) have a heterogeneous sample – aiming at presenting a multiplicity of voices and evidence; (2) have a balanced point of view (public servants, private experts etc.) and (3) cover different land-use planning levels (from central to local).

2.3 In-depth analysis

2.3.1 Expert interviews

The interviews (eight in total) took place between October 2020 and mid-February 2021. The interviewees were asked to participate in a semi-structured interview using a specific list of questions (the interview protocol is included in the technical report). During the interviews, local experts were relatively free to expand the discussion.

2.3.2 Selection and analysis of Lithuanian interventions

According to the SUPER project, land use is influenced in part by the introduction of all kinds of public-sector interventions (ESPON, 2020a). The project distinguished five intervention types according to their aims and scope (densification, regeneration, containment, governance, and sectoral policies). The project also distinguished five intervention types according to the kind of instrument being deployed (e.g. visions and strategies, rules and legal devices, and regulations, programmes and projects).

Four data collection methods were employed to select interventions in Lithuania: (1) input provided directly by the Lithuanian Ministry of Environment, (2) an analysis of the ESPON COMPASS national project reports (3) suggestions provided during the interviews (4) literature review and targeted searching. The third method provided the most results because it related to the direct experience of the contacted experts, while the fourth method was used to fill gaps. Interventions were selected on the basis of their impact on land use and placed into an intervention dataset using the same structure and fields as the SUPER intervention database. To this end, information was gathered on each intervention as regards its basic data (name, scale, scope,

timeframe, etc.), characteristics (type of instrument, legal status, policy area, etc.) and effects (on efficiency and effectiveness in reaching goals, on sustainability, side-effects, etc.). Finally, the interventions were assessed according to a list of sustainability indicators identified by ESPON SUPER.

In the end, the spin-off identified and analysed 22 interventions that somehow deal with sustainable land use in Lithuania.

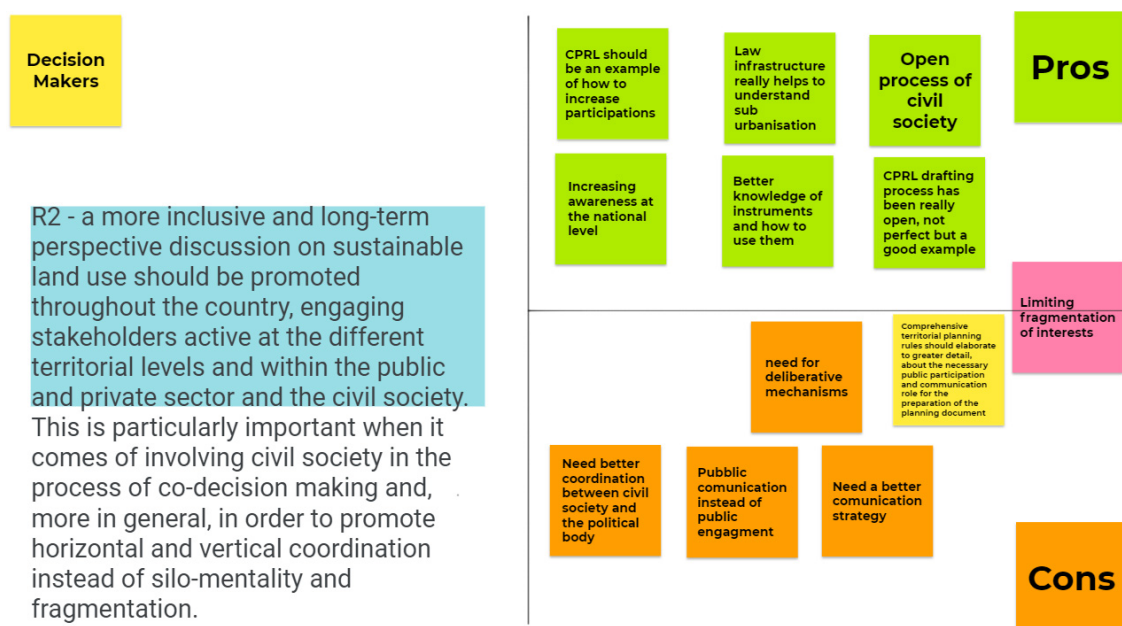
2.3.3 Selection and analysis of European interventions

This spin-off applies the *SUPER Guide to sustainable urbanization and land use* and database to a specific country. The objectives are: (i) to highlight if the country's development is in line with the main European trends; (ii) to select a preliminary set of examples of interventions that can be useful for the elaboration of recommendations (iii) to identify opportunities and warnings. This exercise was helpful to craft and select recommendations and suggestions for promoting sustainable land use. This analysis resulted in the selection of 25 salient interventions from the SUPER project.

2.3.4 Crafting and validating recommendations

An online focus group workshop was organized to test and discuss the policy recommendations elaborated in the course of the spin-off activities. The participants (3 from Lithuania and 2 from the service provider) were selected to guarantee a balanced representation of interests (public vs private experts, for instance). During the workshop, participants had the opportunity to express their opinions and advance suggestions for modifications (Figure 2.1). This feedback and other insights were incorporated into the draft recommendations, which were later discussed and validated with the Ministry of the Environment.

Figure 2.1
Excerpt from the online focus group



Source: authors' elaboration on Google Jamboard

3 Territorial and institutional context

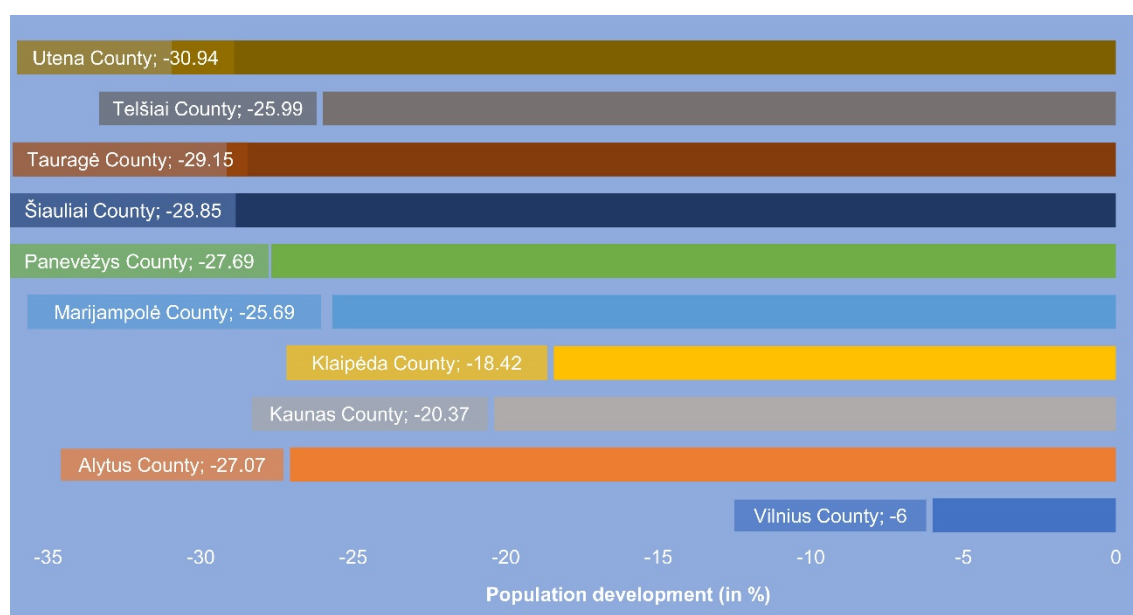
3.1 Main drivers of land-use changes

3.1.1 Demographic development

Demographic fluctuation is a major driver of land use change. Based on NUTS 3 level data for the 2000-2018 period, Lithuania shows a substantial decline in inhabitants similar to other Baltic states such as Estonia and Latvia. This has affected the country as a whole – almost everywhere well over 10% – except Vilnius County where population growth was ‘only’ -6% (see Chart 3.1).

Chart 3.1

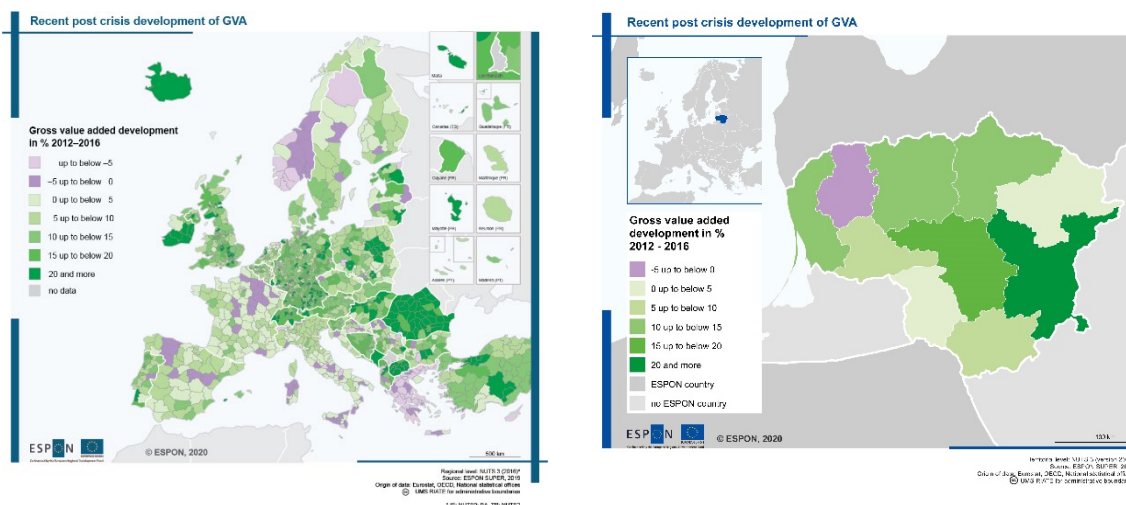
Long term population development in Lithuania 2000-2018



Source: authors' elaboration

3.1.2 Economic development

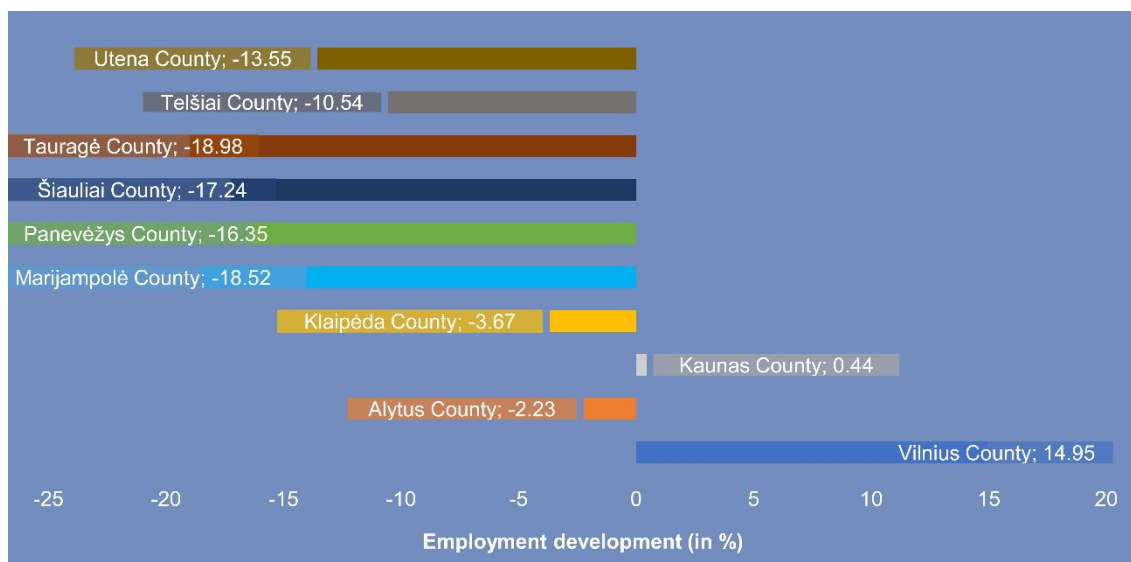
Another major driver is economic development. Growth creates demand for industrial areas, warehouse space, shops, and offices (ESPON, 2020b). Lithuania has performed well in Gross Value Added (GVA) growth in relation to the European average (see Map 3.1) in the post-crisis period (2012-2016). As the crisis hit different parts of the country differently, GVA varies greatly from county to county. Some counties performed very well (e.g. Vilnius and Kaunas), while others saw modest economic growth (Marijampolė and Utena County, for instance) and Telšiai County declined.

Map 3.1**Recent post crisis development of GVA in Europe and Lithuania, 2012-2016**

Source: authors' elaboration

3.1.3 Employment development

Employment usually bears a more direct relationship to demands for space than GVA (ESPON, 2020b). Only Vilnius (+15%) and Kaunas (+0.5%) show positive employment growth over the 2000-2016 period (see chart 3.2). All other counties lost jobs, Tauragė and Marijampolė in particular. As a consequence, many young people in peripheral rural areas in these counties are moving out, which exacerbates ageing and school closures in these areas (Pociūtė-Sereikienė & Kriaučiūnas, 2018).

Chart 3.2**Long term development of employment in Lithuania, 2000-2016**

Source: authors' elaboration

3.2 Main land-use changes

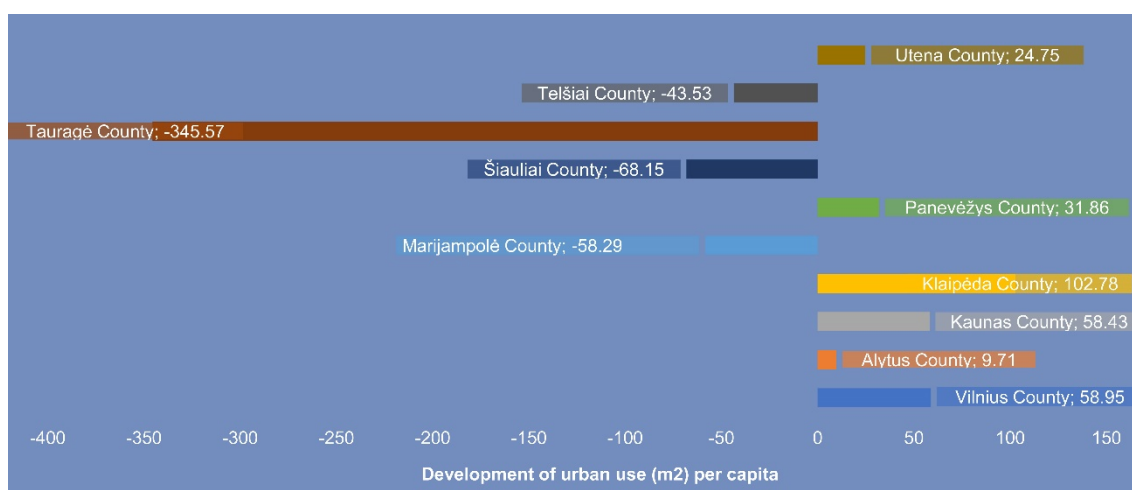
Based on Corine Land Cover data provided by the Copernicus Institute, it has been possible to explore land-use change in Lithuania using four different measurement years: 2000, 2006, 2012 and 2018, which translates into three change periods 2000-2006 (pre-crisis), 2006-2012 (crisis) and 2012-2018 (recovery).

3.2.1 Urbanization

Lithuania is one of the least urbanised countries in Europe. All Lithuanian counties have less than 5% urban use except Kaunas County, which is still under 10%. Although Lithuania is suffering from intense depopulation, urbanization has not generally followed suit. A majority of counties show increasing urban use, the most in Klaipėda County at almost 16%. On the other hand, extensive deurbanization was evident in Tauragė County (almost -25%). This heterogenous development is reflected in the data on land-use change per capita (see Chart 3.3): 6 out of 10 counties gained more urban land than population, while this was the opposite for the remaining 4 counties.

Chart 3.3

Development of Urban Use per capita in Lithuania, 2000 - 2018



Source: authors' elaboration

We also find differences in development over time: in Klaipėda and Telšiai County the period of greatest development was between 2012 and 2018, while in Kaunas, Panevėžys, Šiauliai and Tauragė County this occurred in the 2006-2012 period. The remaining 4 counties (Vilnius, Alytus, Marijampolė and Utena County), urbanized primarily in the period from 2000 to 2006.

3.2.2 Change in urban form

Not only the magnitude of urbanization is important for sustainability, but also the way this physically occurs. To investigate this, the SUPER project assessed urban form according to five development models: compact, compact/polycentric, polycentric, polycentric/diffuse and diffuse.

According to this methodology, the Lithuanian main structure — the predominant urban morphology in each territory on the basis of the shape of the largest agglomerations in the region — is heterogeneous, but mostly compact. The main structure of most counties is compact-monocentric (5 out of 10) or compact-linear (2 out of 10); only 3 counties were classified as polycentric. Since 2000, the urbanization of 7 out of 10 counties was characterized by 'contiguous near centre' development. This is less so for the remaining 3 counties described as 'contiguous at distance', which indicates some spreading out.

Outside of Lithuania's relatively compact main structure lies the substructure. This is characterized as more scattered and diffuse, which is common in Europe. However, heterogeneity in Lithuania is striking: the substructure of 5 counties was polycentric-diffuse (Telšiai, Šiauliai, Kaunas, Marijampolė, Alytus), while this was diffuse in Panevėžys and Utena. On the other hand, Klaipėda and Tauragė were classified as compact

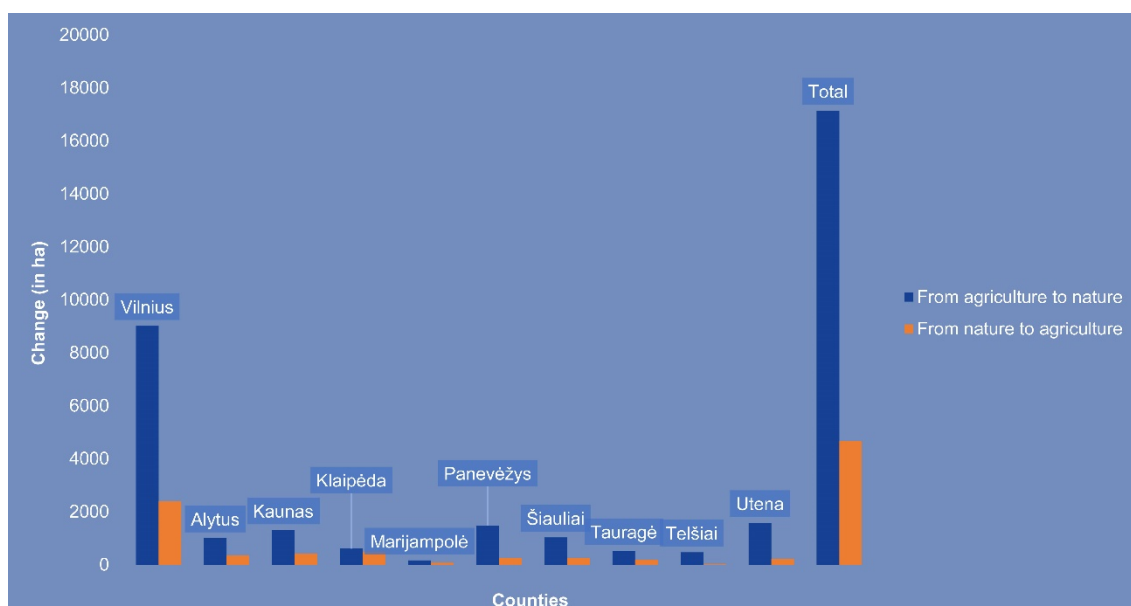
and Vilnius as ‘sparse’ – meaning that there is virtually no urban land use outside the main structure. Development in the substructure in the 2000-2018 period also reveals a relatively compact urbanization process: with most building occurring ‘at edges’ of other urban land uses. However, given the already relatively diffuse urban form in the substructure, building at the edges of these scattered developments will not necessarily lead to more compactness overall. Furthermore, a couple counties were splintering further with the development of new cores (Klaipėda and Alytus).

3.2.3 Non-urban land-use change

Most Lithuanian counties are dominated by agriculture; Marjampolė County has a share of 73%. Only Alytus and Vilnius County have just under 50% agricultural land cover. There was considerable land conversion between nature and agriculture over the 2000-2018 period. For example, almost 10,000 ha in Vilnius County changed from agricultural to natural and about 2,000 ha from nature to agriculture, implying a net increase of natural land by 8,000 ha (see Chart 3.4). In Lithuania as a whole, the net change from agricultural land to nature was about 12,500 ha or about 0.2% of the total surface area.

Chart 3.4

Land change from agricultural to natural and vice versa in Lithuania, 2000 - 2018



Source: authors' elaboration

3.3 Institutional context

3.3.1 State structure and planning system

For almost two decades, spatial planning responsibility was shared among three levels. At the national level, the Lithuanian parliament established the directions of spatial development of the national territory and functional priorities. Counties were charged with regional development. At the local level, municipalities were responsible for organising the preparation of planning documents for urban and rural areas. In 2010, a decree was issued that eliminated about 44% of county responsibilities. Most of these were assumed by the central government and, more sporadically, the 60 municipalities (National Audit Office of Lithuania, 2011). The former counties are now statistical units without planning power (ESPON, 2018).

Due to these reforms (the most recent in 2017), the planning system now has two main levels: central planning and municipal/local planning (cities or parts thereof, towns or parts thereof, villages and steadings). At present, the central level establishes spatial concepts, principles and priorities while the municipal/local level is responsible for implementing plans in line with local needs and conditions. Each level has its own planning documents to control land use such as comprehensive plans of the territory of the country and its

parts, comprehensive plans of municipalities or their parts, detailed plans as well as various special plans (e.g. land management documents, special plans of protected areas, plans concerning the protection of immovable cultural heritage, plans for the development of infrastructure) (Gražulevičiūtė-Vileniškė & Zaleskienė, 2016).

The most important strategic planning document in Lithuania is the *Comprehensive Plan of Republic of Lithuania* (CPRL), which establishes guidelines for the development of the national territory, defines principles for the rational use of land, and identifies matters of national importance (this document has not been approved yet).

3.3.2 Current land-use practices

The abolition of the regional level in 2010, and with it, regional spatial plans, produced some undesirable effects according to the respondents. There is, for example, more competition than cooperation among municipalities for development, investments, and public services. This fragmentation is not conducive for promoting sustainable urbanization. Still, the current administrative and spatial organization seems able to respond to territorial needs and priorities, although there is room for improvement, particularly with respect to coordination between policy sectors (e.g. the Agriculture Law vs. the 2018 regional housing policy).

All interviewees warmly welcomed the introduction of the CPRL. All agreed on the importance of instruments with a long-term perspective (2050) and a document, which establishes principles, values and spatial trajectories to help central and local authorities in the coming years. Still, there are some unresolved issues with respect to implementation and articulating objectives.

According to the experts, plans at the local level often overestimate building volumes, and allot more land for development than necessary. Moreover, local plans have been incapable of managing territorial imbalances and shrinking processes facing most municipalities. Their rigidity and often inadequate municipal staff inhibit the efficiency of these plans. One expert noted that these plans have the disadvantage that only municipalities can take the initiative to adapt the plan, but in most cases, they have insufficient technical capacity to do so. For this reason, it is difficult to improve existing plans and progress toward sustainable urbanization. The experts call for a more open mechanism to allow for a general revision in cases of plan discrepancy or inadequacy.

Finally, according to the interviewees, the 'Americanization' of Lithuanian society has played a key role in generating unsustainable development practices. A suburban ideal was pursued, with new low-density housing and private cars. Market actors are also wary about regeneration (too expensive and time consuming) and prefer greenfield development. According to the interviewees, only in the last decade is this mentality starting to change. Attention for quality of life, participation of citizens in decision-making processes and environmental movements are all opening up new possibilities for sustainable land use.

4 Interventions at home and abroad

This chapter presents an in-depth analysis and critical reflection on how the ESPON SUPER project can help Lithuanian public bodies address territorial development. It does so by comparing interventions according to their type. By learning about relevant experiences elsewhere in Europe, Lithuanian policymakers should be in a better position to make the right choice at home. With respect to the Lithuanian interventions, 22 examples were identified through the literature review and interviews and entered into the SUPER intervention database to facilitate a comparative analysis. Afterwards, 25 examples from abroad were selected from the *SUPER Guide to sustainable urbanization and land use* and the SUPER intervention database according to their scope, lessons learned and relevance.

4.1 Visions and strategies

Based on the evidence gathered by the SUPER project, one of the characteristics of successful visions and strategies is setting ambitious, future-oriented, and, even more importantly, realistic objectives (ESPON, 2020a).

4.1.1 Examples from Lithuania

Lithuania recently adopted but not yet approved the *Comprehensive Plan of the Territory of the Republic of Lithuania* for 2050 (hereinafter CPRL). The CPRL is the main territorial planning instrument with a long-term vision in the country. The plan “establishes general objectives and directions for development of the country’s territory as well as the functional priorities for the use of remote habitats” (Ministry of Environment, 2020, p. 9). According to the CPRL, sustainable urbanization and land use is a priority for Lithuania. More specifically, the CPRL promotes a (1) polycentric urban system (metropolitan, regional, local centres), (2) compact urban development and (3) hierarchy of urban centres and connectivity.

The Lithuanian government has also set *Lithuanian Urban development policy guidelines*. The main aims are municipal housing policy, territorial development, public participation by and cooperation between different actors and urban/rural synergies. Recommendations developed and approved by the Minister of Environment are to be used in municipal strategic policy. These guidelines could be considered as unsuccessful because they are only considered as a heuristic device and because they do not define clear indicators or goals to be achieved.

A noteworthy example of a local vision is the *Strategic Development Plan of Kaunas City - Municipality up to 2022* adopted in 2015. One of its priorities is the sustainable development of land and infrastructure. According to expert opinion, this document has had mixed success because the plan overestimated building volumes and did not take the demographic trends into account.

At the neighbourhood level, The *Local Action Plan for Žirmūnai* in Vilnius focuses on regenerating public space. The plan and urban vision were prepared together with a local support group; the implementation process is expected to be very intense with many stakeholders involved. A point of concern is that this process heightens expectations of citizens without guaranteeing significant spatial transformation. According to the expert opinion, the list of interventions as well as the action plan were well-conceived, but not implemented due to their complexity and the unavailability of the necessary funds.

4.1.2 Examples from Europe

Visions and strategies are instruments that can help decisionmakers and policymakers address sustainable land use. Over the past few decades, there has been a proliferation of visionary and strategic documents in the field of land use. Visions can define concrete targets as well as new land-use principles in an attempt to alter land development practices. An overview of relevant examples selected for Lithuania is presented in Table 4.1.

Table 4.1
Selection of visions and strategies

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Vision Rheintal of Vorarlberg	AT	Containment	Promotes and supports the creation of an interconnected polycentric region.	Visions can promote intermunicipal cooperation.	In Lithuania, there is a lack of cooperative attitudes, including in the field of planning.
Tri-City metropolitan area planning	PL	Governance	Promotes harmonious, complete, and dynamic development of the Tri-City metropolis.	Discourages harmful competition and improves cooperation while respecting the tradition and identity of each city.	In Lithuania, cities often compete instead of cooperating.
High urban density expansion in Amsterdam	NL	Densification/Regeneration	Aims to reduce soil consumption and enhance high-density urban development.	Interventions can promote compact and yet attractive urban areas.	In Lithuania, urbanization still occurs in a diffuse way.
Corona Verde	IT	Containment	Promotes an alternative vision of the territory based on environmental quality and quality of life. Includes containment interventions.	The strategy mobilised substantial funds for short-term projects that fit within the wider long-term strategy.	This example shows how containment principles can be implemented when involving over 80 municipalities.
Brownfield development target in the United Kingdom	UK	Regeneration	The UK Government set a target that by 2008 at least 60% of all new housing should be built on brownfield land.	Defining measurable targets pays off. Regeneration of brownfields offers a concrete alternative of consuming land.	Lithuania has considerable industrial building sites that can be regenerated.

Source: authors' elaboration based on ESPON SUPER 2020

The SUPER Guide notes that, as any other tool, visions and strategies can have side effects or fail to produce results. The following recommendations can help improve effectiveness:

- Because territorial development is not homogenous in Lithuania, place-sensitivity when drafting visions and establishing targets is advisable. Common perspectives can be created for territories sharing similar needs and challenges;
- Visions and economic programmes in Lithuania are not as integrated or effective as they could be. Visions and strategies should therefore be complemented with economic feasibility programmes to improve effectiveness;
- Political commitment is important, and needs to be sustained over time.

4.2 Rules and legal devices

Sustainable land use can be addressed by deploying specific legal devices, such as binding laws and bylaws, to create a supportive institutional framework (ESPON, 2020a). The initiatives in this category are very diverse, as are their level of implementation and impact on land use.

4.2.1 Examples from Lithuania

In 2014, the Environment Minister Order defined new *territorial planning norms* which set guidelines and regulations for comprehensive plan development and delineate areas for urbanization, deurbanization, forestry, agriculture, and the like. They also state that municipalities shall highlight territories of priority development for social and physical infrastructure. They also recommend common standards such as at least 30 citizens/ha density and a maximum distance of 800 meters to public transport. Despite the move towards sustainable land-use principles, the interviews revealed that success is mixed.

In 2016, the Lithuanian government issued a decree that regulates land ownership, management and use. As far as its scope is concerned, this decree could be viewed as a success, but relative to sustainable land-use goals it was regarded as rather unsuccessful. According to the experts, this decree allowed citizens to increase soil consumption especially in agricultural areas due to the latitude given to farmers.

The *real estate tax act* adopted in the early 2000s also affects land use. This tax is only paid by companies and owners of real estate deemed high-end (0.3% to 3% of value annually), while the land tax is paid by every landowner (0.01%-4%). Municipalities determine the actual percentage but the 'value' here is the official appraised value, which may be lower than the market value. According to the expert opinions, by increasing taxes on city centres (high-end real estate), it encourages sprawl to peripheral areas where taxes are lower.

4.2.2 Examples from Europe

As highlighted in the SUPER project, sustainable land use can be addressed by adopting *ad hoc* laws and norms (e.g. on land use or environmental protection) as well as disincentives (e.g. fees, ad hoc taxes) (ESPON, 2020a). An overview of relevant examples selected for Lithuania is presented in Table XXX (see Table 4.2).

Table 4.2
Selection of rules and legal devices

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Referendum to limit land take	CH	Containment	The referendum was on curbing urban sprawl and promoting infill development. Additional land can only be zoned if a real need exists.	Citizen awareness counts. Political legitimacy can be gained by implementing deliberative mechanisms.	Public participation matters.
Weber Law	CH	Containment	This law limits the construction of second homes caps second homes per municipality at 20% of the housing stock.	It is important to define clear and measurable targets.	Since the law on agriculture is too generous with giving landowners building rights, such restrictions could help reduce urbanization rates, especially in tourist areas.
Vorarlberg Land Transfer Law	AT	Containment	Maintains the functional continuity of agricultural land by regulating its transferability.	Functional continuity is an efficient way to reduce agricultural land fragmentation.	By imposing restrictions on use, this can reduce land speculation and unnecessary development.

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Resolution on construction fee in Emilia Romagna Region	IT	Regeneration and Containment	This doubles fees for projects that convert agricultural land into built-up areas and decreases fees by 35% to 100% for projects aiming to rehabilitate abandoned areas.	Construction fees can be used as either incentives (carrot) or disincentives (stick).	Investors in Lithuania are reluctant about regeneration and high-density building and prefer greenfields.
Development and Maintenance Fee in Upper Austria	AT	Containment	The initiative levies an infrastructure fee on the owner.	Fees can discourage urbanization and level the balance between market needs and greenfield preservation.	Infrastructure is a driving force behind urbanization. By passing these costs on to developers, this can slow out-of-town urbanization.
Soil compensation account introduced in Dresden	DE	Containment	This limits built-up land for settlements and traffic to 40% of the total urban land. It also forces investors to compensate for the loss of soil.	Containment can be achieved by urbanization caps and charging fees.	Diffuse urbanization problematic in Lithuania. These type of measures can limit the use of land when unnecessary, supporting local municipalities in the identification of more suitable solutions
Law on protection of agricultural land Czech Republic	CZ	Containment	Mandates that high-quality soil can only be used for building if other public interests prevail.	Soil quality can be a route towards sustainable urbanization.	It is possible to direct urbanization away from areas with high-quality soil.

Source: authors' elaboration based on ESPON SUPER 2020

The implementation of rules and legal devices does not guarantee success. Based on experiences in Europe, the following recommendations are in order:

- Be clear about objectives (e.g. limiting land consumption, protecting valuable natural areas, controlling housing markets). This does not always occur in Lithuania.
- Be strict as appropriate for the institutional context; this is particularly important when setting norms with operative land-use targets.
- Be technically feasible. Institutional feasibility is also often an issue in Lithuania.

4.3 Land-use regulations

Land-use regulations or plans establish binding principles, usually through zoning, that define how land can or cannot be transformed (ESPON, 2020a). In general, planning documents are well regarded and understood by experts in Lithuania; their hierarchical organization and rationale are clear. However, the daily practice of planning requires some improvements. The rigidity of plans, overestimation of buildable areas and excessive competition between municipalities indirectly favour unsustainable land use.

4.3.1 Examples from Lithuania

The *Lithuanian Law on Spatial Planning* (last revision in 2017) introduces the comprehensive plan as a legal document at the central and municipal level to regulate landscape management, land-use and zoning, infrastructure, green spaces, cultural heritage, mobility and recycling and energy. Building densities and heights are defined in the plans as are provisions for industry, manufacturing, and other functions.

The *National Landscape Management Plan* was drawn up in line with the European Landscape Convention (ELC). It defines zones of landscape management, determines their regulatory regime and development trends. Moreover, the plan contains suggestions for urban and natural development and prescribes measures to strengthen the ecological stability of landscapes and protect natural and cultural landscapes recognized as being of outstanding beauty. Finally, it provides a territorial analysis of cultural heritage and describes priority actions to help preserve it. According to expert observations, this planning tool is particularly useful because its prescriptions are binding for both central and local plans.

Sustainable Urban Mobility Plans (SUMPs) are linked to a city's master plan. Funds are available for SUMP implementation and allocation is carefully managed and evaluated. In terms of sustainable land use, this plan is not very successful because it is primarily related to mobility. The majority of experts felt that the infrastructure development model pursued until now has dramatically increased private transport, and with it, demand for roadways. On the other hand, public transportation is relatively unattractive. In this respect, expectations are high among the interviewed experts for the new law on infrastructure which entered into force on 1 January 2021.

4.3.2 Examples from Europe

Land-use plans can be deployed both to promote urban development or protect land from development (ESPON, 2020a). The SUPER intervention database contains a number of noteworthy examples relevant for the Lithuanian context (see Table 4.3).

Table 4.3
Selection of land-use regulations

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Municipal operative plan of the city of Reggio Emilia	IT	Containment	Seeks to reduce the number of areas zoned for urban uses but remained unbuilt.	The municipality reclaimed its power to (re)organize its territory.	Spatial plans in Lithuania often overgenerous in granting development rights. In many cases, sites remain untouched, impeding alternative uses.
Municipal Structural Plan of the Union of Municipalities of Bassa Romagna	IT	Containment	Seeks to limit competition between municipalities for development via a common strategy. 9 municipalities worked together to draft planning tools to address sustainable land use.	Cooperation between municipalities is viable and often pays off in terms of sustainable land use.	One of the drivers of diffuse urbanization is intermunicipal competition for funds and investment. Cooperation can increase the prospects for sustainability.
Province of Utrecht	NL	Containment	Removes development rights for zoned urban land (primarily unbuilt office space) via an imposed land-use plan.	If legally binding, plans can be used to convert unbuilt urban zones to another use.	Since Lithuanian plans often overestimate development need, this intervention provides an example to deal with unbuilt zoned land.
Territorial Action Plan of the Huerta de Valencia	ES	Containment	Reduces pressure on the metropolitan area by preserving agricultural land.	Zoning can protect agricultural land from urban growth.	Agricultural land is under pressure in Lithuania, particularly near the main cities.

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Rural Park South	IT	Containment	Reducing pressure on the metropolitan area by preserving agricultural land.	Plans can help prevent soil sealing by setting strong and binding norms.	Containment measures like these, can help control land consumption by guaranteeing the preservation of valuable rural land near urban areas.
Physical Environment Special Plan Protection of Andalusia Region	ES	Containment	Imposes binding targets (quantitative urbanization caps for medium and large municipalities) at the regional level.	Measurable targets can support sustainable land use.	Until now, Lithuania does not have land conservation targets.

Ssource: authors' elaboration based on ESPON SUPER 2020.

According to the SUPER project, land-use regulations have a greater chance to succeed if:

- They strike an optimal balance between the need for development and the need for sustainable land use. Often the former is privileged at the expense of the latter, especially where speculative market mechanisms are dominant, such as in Lithuania;
- They promote sustainable land use by reducing development rights. Thinking qualitatively instead of quantitatively can put the need for urban development into perspective. In Lithuania this relevant since plans often overstate need even in the face of demographic decline;
- They are conceptualized as instruments to not only develop land, but also protect it from development. In Lithuania, this could help to reduce urban diffusion.

4.4 Programmes

Programmes are policy packages aiming at a particular objective over time. They can be used to create favourable economic conditions (e.g. financial schemes, direct investments, development funds) for sustainable land use (ESPON, 2020a). Lithuania has been experimenting with a series of programmes to address (directly or indirectly) sustainable development in a more comprehensive and multidimensional way.

4.4.1 Examples from Lithuania

In the framework of the 2014-2020 cohesion policy, Lithuania uses the *Integrated Territorial Investment* (ITI) tool to implement an integrated strategy for its territory. ITI programmes are drafted by municipalities in cooperation and consultation with central and local government authorities (including ministries, universities, territorial labour exchange offices and other public bodies), social and economic partners and the local community. Despite being attractive instruments to promote development, ITI implementation sometimes does not always conform with the provisions of existing statutory plans, which can cause friction.

A number of *Local Action Group Initiatives* (LAGs) have been implemented for rural and peri-urban areas. Legally, a LAG is a non-profit organization made up of public and private organizations drawn from rural villages having a broad representation from different socioeconomic sectors. LAGs can apply for EU grants to implement the local development strategy of their respective territory. According to the experts interviewed, the LAGs have been able to address sustainability issues. The programme has allowed local organizations to promote the rehabilitation of existing buildings and open spaces using innovative experiences based on citizen participation and new forms of social responsibilities.

Lithuania designated seven *Free Economic Zones* (FEZs), which offer extremely attractive conditions for locating businesses (e.g. ready-to-build industrial sites with physical and/or legal infrastructure, support services, and tax incentives). These kinds of economic programmes are often implemented in conflict with existing plans. In some cases, FEZs have contributed to concentrated development, while in others have it stimulated diffuse urbanization.

The *regional housing policy* introduced in 2018 also affects urbanization. This subsidy scheme allows a family (i.e. a couple under 36 years old, generally with small children) to apply for a loan to build a new house or purchase land for housing. Most of the areas targeted by the policy are in district municipalities (including rural and peri-urban areas); most municipalities which have a high housing demand (e.g. Klaipeda, Kaunas, Vilnius), as well as tourist-status cities, are ineligible. With respect to the policy's own objectives, the government claims it was successful as all funds were spent. With respect to sustainable land-use principles, it can hardly be viewed as successful since the majority of families purchased housing near the bigger cities (in metropolitan areas), thus intensifying suburbanization.

A noteworthy programme at the local level is the *Renovation of Heritage Buildings Programme* of Kaunas. According to the expert opinions, this programme is quite successful since several projects are approaching the implementation phase others are already concluded. Last year, owners of 114 buildings used Kaunas City Municipality funds for restoration.

4.4.2 Examples from Europe

Throughout Europe, a number of interesting programmes have directly or indirectly promoted fair, equal, and balanced land-use practices (ESPON, 2020a). Particularly relevant for Lithuania are the following interventions drawn from the SUPER intervention database (see Table 4.4).

Table 4.4
Selection of programmes

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Incentives to increase roof greening in Linz	AT	Regeneration	Incentives to increase greening in built-up areas to reduce air pollution.	Targeted incentives can enhance spatial quality and reduce land consumption in existing urban areas.	Enhancing spatial quality can occur via the rehabilitation of existing urban stock.
22@Barcelona programme	ES	Regeneration	Rehabilitation 200 ha of industrial land into an urban district offering modern spaces for commercial and knowledge-based activities.	Regeneration programmes can support sustainable urbanization if political will exists.	Lithuania has many abandoned areas that can be rehabilitated.
Piano Periferia 1 and 2	IT	Regeneration	Aims to recover abandoned and deprived areas by investing in environmental, social, and economic sustainability.	Investing in regeneration and reconversion of existing building plots can promote sustainability.	Lithuania has many abandoned areas that can be rehabilitated with special focus on social initiatives.

Source: authors' elaboration based on ESPON SUPER 2020

These examples clearly show that programmes can effectively promote regeneration if they are:

- Properly designed to avoid or limit side-effects and trade-offs. This is particularly important when sectoral initiatives do not take spatial dimension into account (e.g. the Lithuanian Ministry of Interior's housing subsidy scheme);
- Focused on a few well-defined objectives. In some cases, the aims of development programmes are too vague and their implementation actions too ill-defined. In any case, it is important to avoid conflicts between economic developments programmes and statutory land-use planning;
- Activated as instruments to support public or private initiatives to achieve strategic objectives. In most cases, private-public partnerships can support the implementation of a development programme.

4.5 Projects

Projects are individual ad hoc initiatives within a given timeframe (ESPON, 2020a). They can act as a vehicle for sustainable land use but also produce unsustainable development and land overconsumption.

4.5.1 Examples from Lithuania

The *PAUPYS* project helped to regenerate a former industrial area of seven hectares in the old town of Vilnius into a destination for both residents and tourists. A side effect was the partial gentrification the area.

A similar example is the *Ogmios City* project which sought to transform an underutilized outlet centre into a full-fledged and fully integrated city quarter. By applying subtle changes, this former soviet army base was infused with urban qualities which changed its image and use.

The *White Bridge project* and the intervention of *bike path and riverfront reuse in Vilnius* represent two human-scale sustainable transport solutions and accessible green spaces. The White Bridge project realized nine beach volleyball courts, three basketball courts, children's playgrounds and outdoor training and skating courts on an area of nearly 9 hectares. The second project realized or refurbished over 12 km of cycle paths in the capital and plans to install 1,500 new bicycle parking stands throughout the city.

Finally, the *Akropolis shopping mall* is perceived as an intervention mainly driven by economic motives, rather than social or environmental ones. This lack of success is partly the result of unclear urban policy and the rigidity of a plan which was not able to capture the added value of the development.

4.5.2 Examples from Europe

All over Europe, projects abound that foster sustainable urbanization by supporting densification, regeneration, and containment. Some are more market oriented or public-led, while others focus on citizen participation. Below is a selection of projects drawn from the SUPER intervention database (see Table 4.5).

Table 4.5
Selection of projects

Name	Country	Intervention type	Main scope	Lessons Learned	Relevance
Royal Seaport eco-district project	SE	Regeneration and Densification	The project combined the need for regeneration and densification.	Cooperation between actors is important. Uncoordinated initiatives can create overall failure.	Not all projects are balanced: sometimes regeneration (and densification) came at the expense of social and economic needs.
Dublin Docklands	IE	Regeneration and Densification	Aimed at reusing urban resources left vacant from the shifting dynamics of port facilities, deindustrialization, and the emergence of a services-based economy.	Including sustainable urban solutions with strong attention of social and urban spaces, is important.	Coastal areas can benefit from projects where regeneration enhances public space and involvement of citizens.
South Harbour in Copenhagen	DK	Regeneration and Densification	Contributed to the conversion of hectares of industrial area into liveable public space.	Regeneration is a complex process with both a physical and a social component.	Regeneration projects can improve the quality of coastal areas.
Eco-Viikki in Helsinki	FI	Spatial Quality	Sought to reduce the human footprint and promote an environmentally oriented approach.	Living standards can be successfully combined with standards for minimal environmental impact.	Interventions in Lithuania do not always include all dimensions of sustainability.

Source: authors' elaboration based on ESPON SUPER 2020

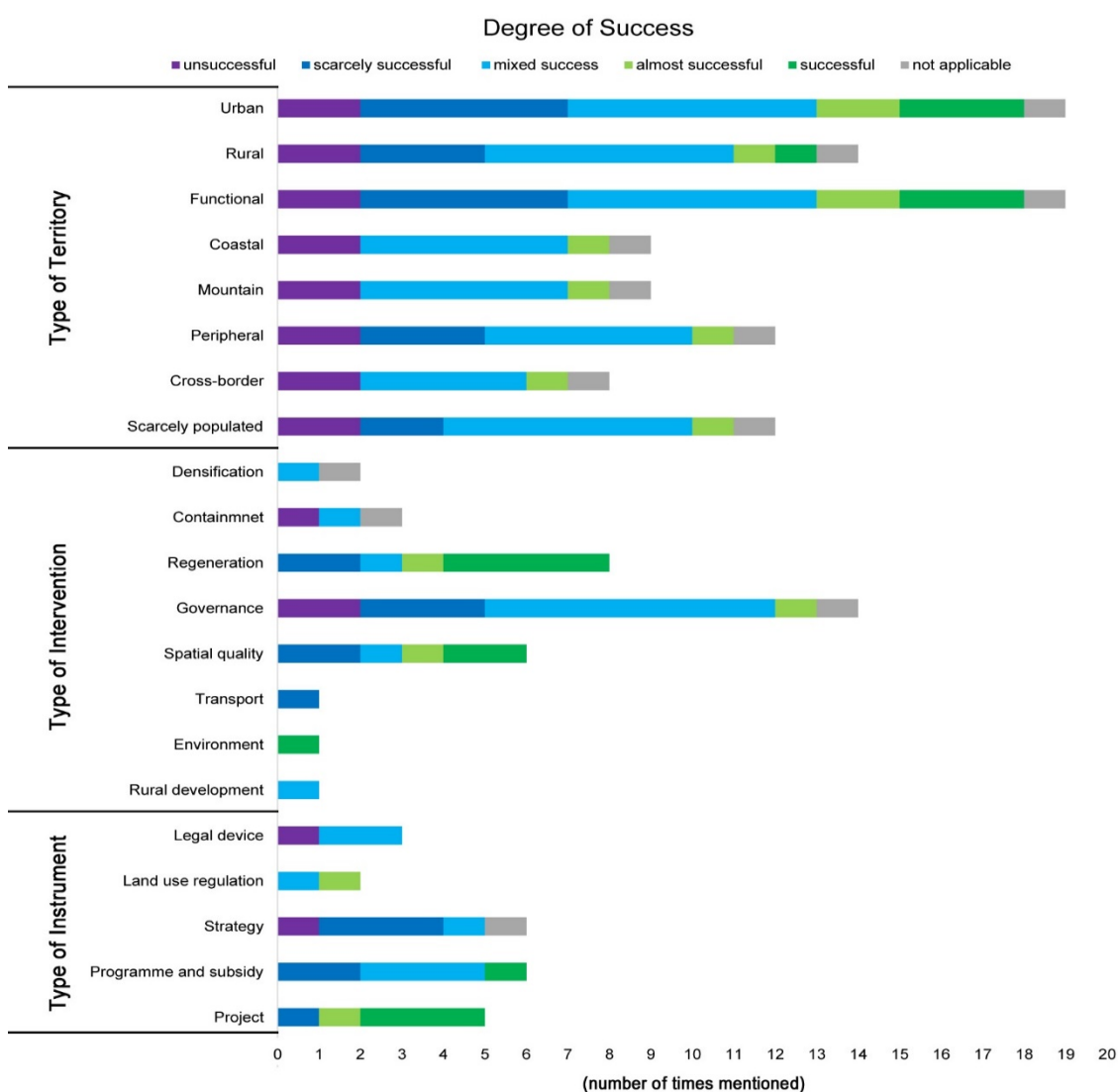
On the basis of the SUPER project evidence base, successful projects are those that:

- Are part of a long-term territorial vision but focus on short-term objectives. Plans can inhibit innovation even when market parties are willing to implement sustainable solutions;
- Combine economic priorities (cost-efficiency), environmental priorities (environmental quality) and social priorities (citizen involvement, social housing, quality of space, etc.). These kinds of projects can also benefit from development programmes.

4.6 Assessment of interventions

This section highlights the implications that interventions may have on land use by reflecting on the potential direct and indirect effects. Figure 4.1 presents the degree of success of Lithuanian interventions on sustainability.

Figure 4.1
Degree of success of the interventions for analytical category



Source: authors' elaboration

As illustrated above, no intervention type is fully sustainable or unsustainable (Solly, et al., 2020). Using the sustainability assessment framework developed in the ESPON SUPER project, each identified intervention

in Lithuania was further assessed according to a number of indicators measuring the economic, the ecological and the social dimensions of sustainability (Table 4.6). The assessment of the interventions was made on the basis of expert judgement and placed on a Likert scale ranging from (- -) for a strong negative impact to (+ +) for a strong positive impact (ESPON, 2020c). A (+/-) indicates conflicting or no impact and n/a not applicable or available. This double assessment (i.e. using expert judgment and indicators) can help to highlight possible side effects of land-use policies. From this assessment, one can conclude that planning strategies like the CPRL score quite high on sustainable land use whereas economic programmes like the Free Economic Zones, are more one-dimensional. It is also interesting to note that many interventions seek to reduce car mobility and pollution.

Table 4.6
Sustainability assessment of indicators

Interventions		Dimensions of Sustainability																										
		Economic Sustainability								Ecological Sustainability										Social Sustainability								
		GDP, wealth	Public finance	Jobs	Accessibility	Business areas	Housing demand	Transportation costs	Energy consumption	Reducing mobility (by car)	Reducing pollution, including CO2	Green urban areas	Biodiversity	Land consumption	Natural hazards	Climate change	Consumption of resources	Renewable energy	Space for future water retention	Circular economy	Health	Affordable housing	Equity/inclusion	Public and recreational space	Variety (high-rise, suburban, etc.)	Mixed-use areas	Satisfaction with home environment	
1	Regional Housing Policy	+/-	+/-	+/-	+	++	++	+	-/+	-	+/-	-	-	--	-	-	--	+/-	-	-	+	++	++	+/-	+	+	+	
2	Sustainable Urban Mobility Plans (SUMPs)	+	+/-	+	++	+	+	++	+/-	++	++	+/-	+/-	-	-	-	-	-	-	+/-	+/-	+	+/-	+/-	+/-	+/-	+	+/-
3	Comprehensive plan of municipality	+/-	+/-	+/-	+/-	+	+	+/-	+/-	+/-	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+	+/-	+/-	+/-	+	+	++	++	
4	National Landscape Management Plan	n.a	n.a	n.a	n.a	n.a	n.a	n.a.	n.a.	n.a.	+	++	++	++	++	++	++	++	++	++	+	n.a	n.a	n.a	n.a	+	+	
5	Lithuanian Urban development policy guidelines	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+/-	+	+	+	+	+/-	+/-	+/-	+	+/-	+	+/-	+/-	+/-	+/-	+/-	+/-	+/-	
6	Territorial planning norms	+	++	+	++	+	+	+/-	+/-	+	+/-	++	+	+	+/-	+/-	-	+/-	+/-	+	+	++	+	++	+/-	++	++	
7	New Comprehensive Plan of the Territory of the Republic of Lithuania	++	+	+	++	++	+	+	+	+	+	+	++	+	++	++	++	++	++	+	+	+	+	+	+	+	++	
8	Lithuanian land law	+	+	+	+/-	+/-	++	--	--	+/-	-	+/-	--	--	-	-	--	-	-	+/-	+	++	+/-	+/-	+/-	-	+/-	
9	Local Action Groups	+/-	+	+/-	+	+	+/-	+/-	n.a	n.a	n.a	+/-	+/-	+/-	n.a	n.a	n.a	+/-	n.a	++	+	+	++	++	++	++	+	
10	PAUPYS	++	+	++	++	++	++	++	+	+	+	++	+/-	+/-	+/-	+/-	+/-	+	n.a	+	+	++	++	++	++	++	++	
11	Real Estate Tax Act	++	++	+	++	++	++	+	n.a	n.a	n.a	+/-	n.a	n.a	n.a	n.a	n.a	n.a	n.a	+/-	n.a	++	+	+/-	+/-	+	+	
12	Integrated Territorial Development Programmes in Vilnius	+	+	+	+	+	+	+/-	+/-	n.a	n.a	+	n.a.	n.a	n.a	n.a	n.a	n.a	n.a	++	+/-	+/-	+/-	+	+/-	+/-	+/-	
13	Shopping mall - Akropolis	++	-	++	++	++	--	-	+	-	-	--	--	--	--	--	--	++	--	+/-	+/-	--	--	++	+/-	+/-	+	
14	Strategic Development Plan of Kaunas City - Municipality Up To 2022	+	+	+	++	++	+	+	+	+	+	++	+	+	+	+	+	+	+	++	+	++	+	++	+	++	++	
15	Ogmios City	+/-	+	+/-	++	+	++	+	+	+	+	++	+	+	+	+	+	+	+	++	+	++	+	++	+	++	++	
16	White Bridge Project	n.a	n.a	n.a	++	+/-	+/-	n.a	n.a	n,a	n.a	++	++	++	++	++	++	++	++	++	+	n.a	++	++	+/-	++	++	
17	Bike path and riverfront reuse in Vilnius	n.a	n.a	n.a	++	n.a	+/-	n.a	n.a	++	++	++	++	++	++	++	++	++	++	++	+	+/-	+/-	++	+	++	++	
18	Renovation of Heritage Buildings Programme of Kaunas	+	+	+/-	++	+/-	++	+/-	++	+/-	+/-	+/-	n.a	++	n.a	n.a	+	++	n.a	+	++	+	+	++	++	++	++	
19	Integrated Territorial Development Programmes	+	+	+	+	+	+	+/-	+/-	n.a	n.a	+	n.a.	n.a	n.a	n.a	n.a	n.a	n.a	++	+/-	+/-	+/-	+	+/-	+/-	+/-	
20	Free Economic Zone	++	++	++	++	++	++	++	++	-	--	-	n.a	n.a	n.a	n.a	n.a	n.a	+/-	n.a	+	n.a	n.a	-	-	-	-	
21	Marijampolė Free Economic Zone (Baltic FEZ)	++	++	++	++	++	-	++	--	--	--	-	n.a	n.a	n.a	n.a	n.a	+	n.a	+/-	n.a	n.a	-	-	-	-	-	
22	Local Action Plan for Žirmūnai triangle in Vilnius	+/-	+/-	+/-	+/-	+/-	n.a	+/-	+/-	+/-	+/-	+/-	n.a	n.a	n.a	n.a	n.a	n.a	n.a	+	+/-	+/-	+/-	+/-	+/-	+/-	+	

Source: authors' elaboration

5 How to achieve sustainable urbanization

Decisionmakers and policymakers play a key role in addressing territorial development. As democratically elected representatives, decisionmakers have a political mandate to define policy objectives on what spatial development direction(s) should be pursued. As public servants, policymakers are responsible for selecting or drawing up instruments to achieve the objectives by decisionmakers in an effective and efficient way (ESPON, 2020a). This chapter offers guidance to Lithuanian decisionmakers and policymakers active at central and local levels.

Before presenting the recommendations and warnings, it is important to recall the following:

- Lithuania is faced with severe demographic decline (some counties shrunk by over 30% since 2000). This should be considered when identifying future development trajectories.
- Not all parts of the country are characterised by similar urban development patterns and trends. National priorities and instruments should take local specificities into account.
- No linear relationship exists between demographic trends and urbanization. Various counties continue to urbanize as their population falls.
- The morphological analysis of the main structure and substructure shows a gradual shift from a rather compact model towards more diffuse urbanization.
- There has been a net change from agricultural to natural land of about 12,500 ha over the 2000-2018 period, which corresponds approximately to 0.2% of Lithuania's total surface area.

5.1 Recommendations for the national level

5.1.1 Decisionmakers

The following suggestions are directed at Lithuanian decisionmakers at the national level which can identify the course of action to take. These recommendations concern the content of potential interventions, the approach taken and implementation mechanisms:

- *Set clear and future-oriented objectives.* Goal-oriented and measurable objectives should be set to address sustainable land use. The CPRL, and especially its implementation programmes, should identify both long-term and short-term land-use objectives aligned to the achievement of the 'zero land take for 2050' target set by the European Union. This should be accompanied by the adoption of a long-term vision to provide a framework for short-term operational goals.
- *Take a collaborative approach.* An inclusive discussion that takes a long-term perspective on sustainable land-use should occur throughout the country, involving stakeholders active at the different territorial levels and within the public and private sector and civil society. The participatory process activated during the drafting of the CPRL should not be discarded after the document's approval. The distance between public actors, private operators and citizens can be reduced by organizing seminars, workshops, and public talks where participants can share their ideas, values and principles regarding land-use. At the same time, this provides the opportunity for learning that sustainable urbanization is not a mere technical issue but a collective responsibility.
- *Use open and coordinated implementation mechanisms.* One should strive towards cross-fertilization and the cultivation of synergies between the actions of the various sectors influencing urbanization and land use. In order to avoid generic solutions and uncoordinated initiatives, cooperation should be increased between relevant actors from the central to the local level. This can be done by drawing up the 'rules of the game' together and by establishing clear protocols and a common set of concepts regarding sustainable land use. Guides, handbooks, and manuals should be drafted to enhance horizontal coordination of the CPRL's content.

5.1.2 Policymakers

The following suggestions are directed at Lithuanian policymakers at the national level, which are responsible for designing the implementation of decisionmakers' choices. This can be done by introducing new instruments or (re)applying those already in place. In both cases, policymakers should be aware that:

- *Interventions may have side effects.* Policy initiatives (and especially those of a more sectoral nature) sometimes cause unforeseen and undesirable effects on urbanization and land-use. To avoid this, ex-ante territorial impact assessments (TIA) can be carried out to predict potential effects. Operatively, the TIA can be performed either as a part of the Strategic Environmental Assessment (SEA) or integrated into general land-use planning procedures. Ideally, sectoral policies should be developed in harmony with an overall long-term development vision of the country's territory.
- *Incentives and disincentives can impact sustainable urbanization.* These can alter the payoffs of actors active in the development processes (e.g. municipal governments, private developers) to level the playing field or reward cooperation. For instance, brownfield regeneration can be supported by discouraging greenfield development (e.g. imposing development fees). Some work better near growing main cities than remote areas suffering demographic decline.
- *Monitoring and assessment are crucial for reflexive policymaking.* Establishing measurable and realistic targets makes it easier to monitor performance on sustainable urbanization and land-use indicators. This should be accompanied by an observatory that sets qualitative and quantitative indicators, supports and organizes the platforms for gathering and processing data and assists local municipalities in monitoring their achievement. This can also support revisions and updates of spatial development strategies and instruments.

5.2 Recommendations for the local level

5.2.1 Decisionmakers

Decisionmakers at the local level are charged with realizing central political priorities, addressing local needs and priorities, while at the same time ensuring that the two cohere. Decisionmakers should be aware of the considerable territorial differences within the country. Accordingly, local decisionmakers should:

- *Contextualize objectives and policies.* Different territories have different problems and opportunities and successful initiatives in one territory may fail elsewhere. This is particularly true in the case of Lithuania which, if one excludes the three main urban nodes (Vilnius, Kaunas, and Klaipėda) is predominantly composed of small municipalities. Tailored solutions will increase the chance that planning instruments will be successfully implemented and socially accepted;
- *Create conditions for place-based political cooperation.* Smaller cities can benefit from coordination and cooperation mechanisms such as shared development strategies and joint development programmes. This can be facilitated by establishing compensation mechanisms to share development gains among municipalities. To gain acceptance for such schemes, it is important to underline their net economic advantages (e.g. better economic performance, institutional capacity, and services) as well as the disadvantage of acting in isolation (e.g. higher operational costs, low efficiency, worse services).
- *Be open to and supportive of public participation.* European experiences have shown that public participation is a key factor for improving the sustainability of spatial development. Effective and true public participation can also trigger synergies between different types of knowledge and actors (e.g. technical knowledge of experts, entrepreneurial knowhow, tacit knowledge of residents), and therefore can aid the development of objectives and actions coherent with the public interest and territorial specificities.

5.2.2 Policymakers

Policymakers at the local level act at the nexus between spatial planning objectives at different levels and the actual transformation of land to new uses. They play a crucial role since their everyday activities shape urbanization dynamics. In this context, local policymakers should be aware that:

- *No single spatial planning instrument is sufficient.* Plans are incapable of reducing land consumption on their own: they must be supported by additional measures for implementation. Adequate political and financial support is crucial for implementation. Planning tools at the local level should be better connected to the municipal strategic-development plan. Similarly, local development strategies and plans should be framed within national comprehensive strategies and align themselves with EU cohesion policy. This can help spatial plans to work in tandem with economic programmes, which should improve their chances of success;
- *Be aware of unwanted effects and trade-offs.* Some instruments can trigger uncontrolled or unwanted effects in terms of land conversion or unexpected trade-offs. This can happen when (a) instruments are too rigid and technical, (b) they are not based on a clear long-term vision (c) they are not supported by adequate public engagement mechanisms. It is therefore important that plans (a) incorporate mechanisms enhancing flexibility (e.g. include exemptions or waivers for full planning procedures) (b) adopt a holistic approach that considers the different dimensions and implications of urbanization and (c) facilitate public engagement via deliberative mechanisms;
- *Sustainability dimensions should be integrated.* This can be done by not privileging economic, social or environmental sustainability over the others. Heed also should be paid to the institutional conditions needed for successful implementation and continuation over time. These matters can be supported by incorporating local interventions into medium and long-term strategies.
- *Institutional capacity building matters.* The CPRL will benefit from the mobilization and empowerment of civil servants and experts within the institutions relevant to its implementation. Capacity building initiatives should focus on: (i) strategic thinking and visioning on sustainability; (ii) implementing and monitoring SGD; (iii) land-value capture; (iv) climate adaptation.

In conclusion, the Lithuanian case study clearly shows that each territorial context contains specific land-use challenges and thus requires tailored actions. When zooming out, however, a number of land-use principles and attitudes come into view that seem valid in most cases and contexts. Applying such sustainable urbanisation principles is a responsibility that concerns all actor categories: government, the business sector as well as civic society. The most successful examples developed elsewhere in Europe demonstrate that a well-balanced representation of interests helps to achieve more sustainable urbanization, but when only selected interests are taken into account, results are often more controversial.

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