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Inspire Policy Making with Territorial Evidence

APPLIED RESEARCH //

Synthesis Report

SUPER – Sustainable Urbanization and land-use Practices in European Regions

Synthesis Report // November 2020

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Abbreviations

BBSR	Bundesinstitut für Bau-, Stadt- und Raumforschung (Federal Institute for Research on Building, Urban Affairs and Spatial Development)
EEA	European Environmental Agency
ESPON	European Spatial Planning Observatory Network
ESPON EGTC	ESPON European Grouping of Territorial Cooperation
EU	European Union
FUA	Functional Urban Area
GDP	Gross Domestic Product
GES	Good Environmental Status
ICT	Information and Communications Technology
ITI	Integrated Territorial Investments
JRC	EU Joint Research Centre
LAU	Local Administrative Units
NUTS	Nomenclature of Territorial Units for Statistics
OIR	Austrian Institute for Regional Studies
PBL	Netherlands Environmental Assessment Agency
POLITO	Politecnico di Torino
SDG	Sustainable Development Goal
SUL_NBS	Sustainable Use of Land and Nature-Based Solutions
SUPER	ESPON Sustainable Urbanization and Land Use Practices in European Regions

1 Introduction

The COVID-19 pandemic has forced us to rethink how and where we should live our lives. Do we need as many carparks, airports, or holiday resorts as we once thought? Would we rather live in walkable compact cities, small-town transit communities, or diffuse urban regions with spacious homes and gardens? The decisions we make about urban development and land use today will impact our physical environment for decades or even centuries to come. And given that land-use conversion is socially determined – it is, after all, the outcome of conscious decisions made by human beings – it is also something that can be affected by conscious human interventions. Policies and practices matter. Now is the time to act.

This window of opportunity is a long time in the making. Recent years have seen several high-level studies on urban sprawl (EEA & FOEN, 2016; OECD, 2018) and EU policy initiatives (European Commission, 2011, 2012; European Commission & Joint Commission Resources, 2019; Urban Agenda, 2018). The European Parliament's declaration of a climate emergency in November 2019 can be considered an additional reason to fast-track planning efforts that address land-use sustainability goals (European Parliament, 2019). However, there is only so much the EU can do. It is mainly national territorial governance and spatial planning systems that steer, or attempt to steer, land use through a variety of policy interventions and to varying degrees of success. Given that these interventions take on different guises in different national contexts, serve divergent goals and are implemented at various levels of scale, the European policy context is highly heterogeneous and fragmented (Couch et al., 2008). If Europe wishes to promote sustainable urbanization and land use in its regions, more insight is needed in how this occurs, and what interventions can effectively alter prevailing land development practices.

The primary aim of the ESPON SUPER project is to provide this evidence and give recommendations on how sustainable land use can be promoted and how unsustainable urbanization can be avoided, reduced and/or compensated in Europe, its cities and regions. Specifically, it:

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

This synthesis report pulls together the evidence amassed in the SUPER project by providing conclusions and recommendations for decisionmakers (politicians), policymakers (officials) and other professionals involved in urbanization and land use decisions.

2 The SUPER approach

The basic philosophy of the project is couched within its acronym. It has emphatically chosen to use terminology that is as neutral as possible and which has an affinity with territorial governance and spatial planning, rather than environmental discourse.

- **Sustainability**: we take a broad view of this term, looking at both the temporal aspect (e.g. carrying capacity, generational justice) as well as its thematic aspect (balance between economic, ecological and social dimensions). We add an institutional aspect as well (longevity of interventions, commitment, good governance).

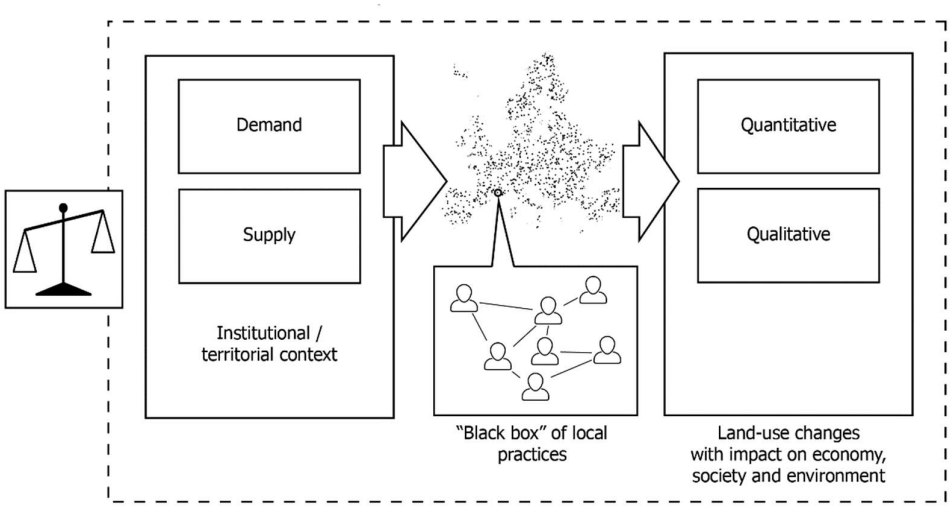
- **Urbanization and land use**: when describing the conversion of land to urban uses we eschew normative terms such as 'urban sprawl' and 'land take' and opt for the more neutral 'urbanization'. In general, we describe urban form in terms of compact, polycentric or diffuse development.

- **Practices**: the conversion of land from one use to another is a human activity, often involving a spatial planning system. Practices refer to how these decisions are made.

- **European Regions**: the territorial diversity of European regions affects urbanization pressures as well as the feasibility of interventions.

The goal of SUPER is not merely to measure urbanization and land-use change in Europe, but also explain how it happens. Urbanization is the outcome of myriad collective and individual decisions made by humans every day about where and how they want to live, work and play within the constraints of what they can afford, have time for, and reach. To understand this better, a conceptual framework was designed that illustrates the main relevant cause-effect relationships governing urbanization and land-use change.

Figure 2.1 The SUPER conceptual framework

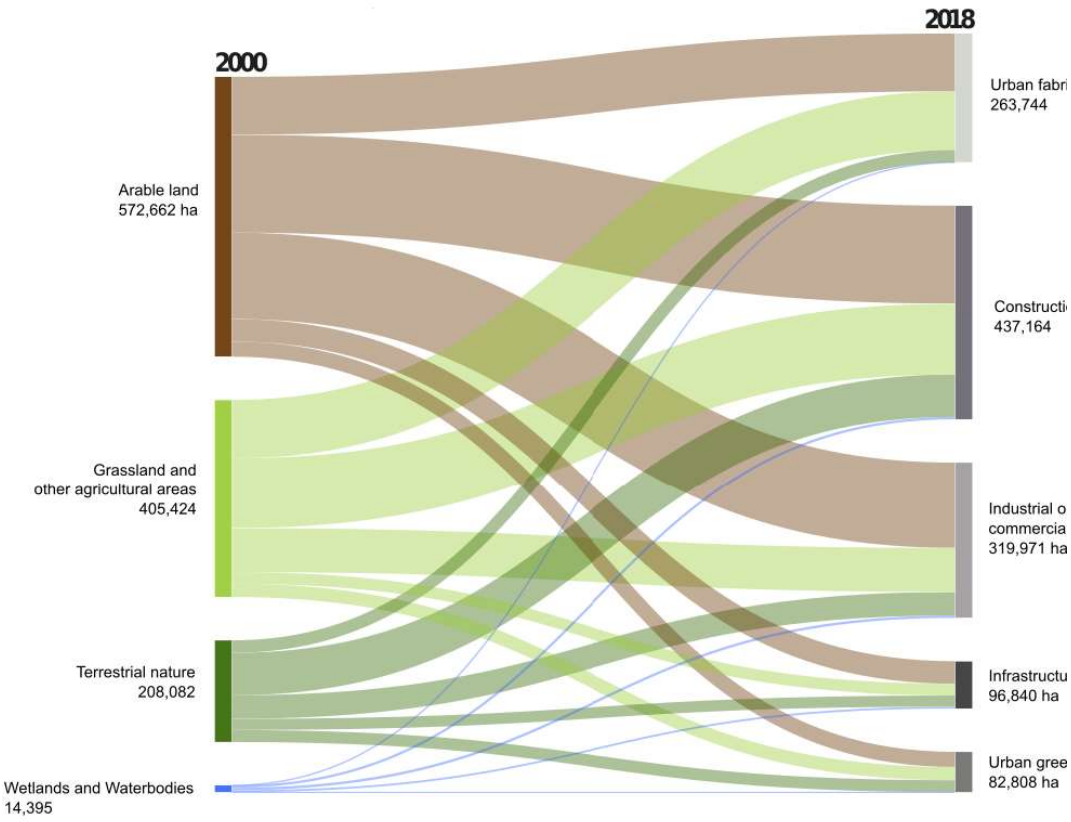


3 Evidence on land-use developments

In the 2000-2018 period, a little under 2.87 million hectares of land changed from one main land-use category to another, or about 0.6% of the surface area of ESPON space. Almost half of this (1.26 million ha or 44%) concerned a conversion to urban land. Figure 2.1 shows the origin and destination of this land-use conversion, revealing that a significant portion is in a transitory state (construction sites).

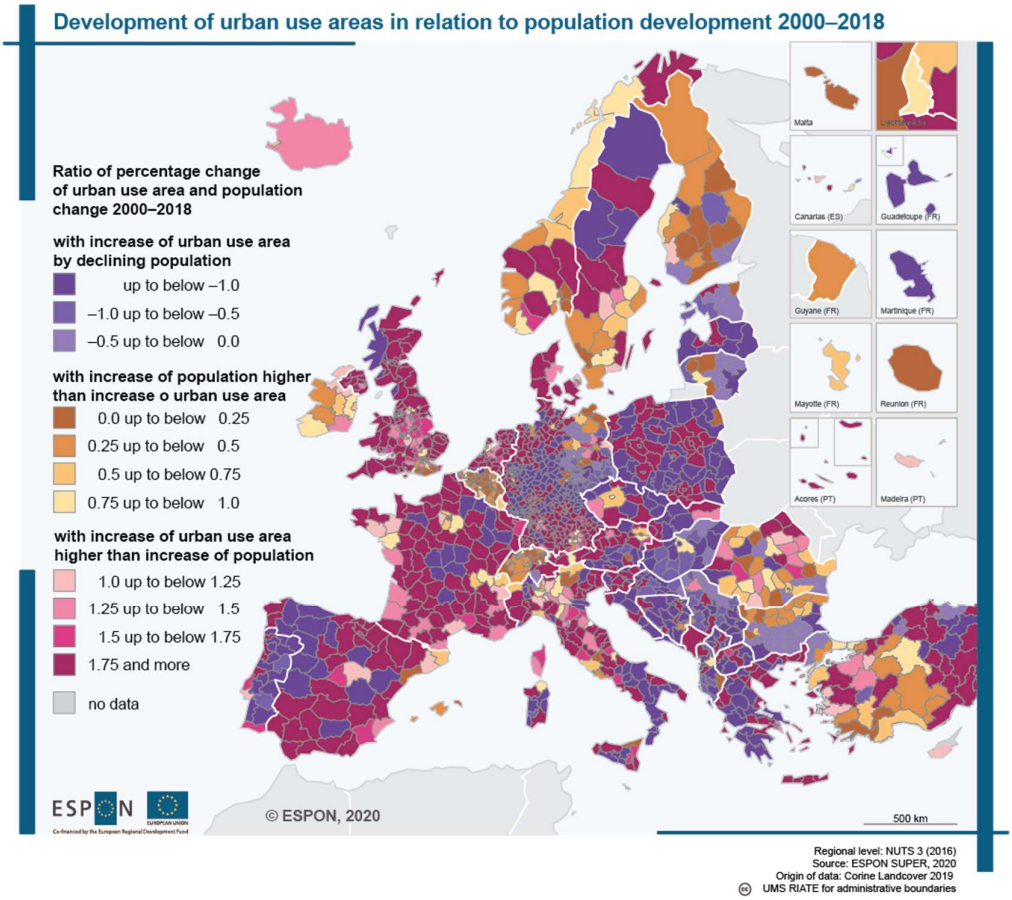
Most of this urbanization came at the expense of agricultural land (78%). Only in Romania (-0.8%) and Bulgaria (-0.1%) did the share of urban land decrease as a whole, mostly non-built uses such as construction sites or dump sites. In total, 8.6 times more land was converted to urban/artificial use than vice versa; it is mostly a one-way process.

Figure 3.1 Land converted to urban use in the 2000-2018 period



Urbanization did not happen equally in all countries and periods. Far less land changed function in the years following the financial and economic crisis, especially in Spain and Ireland. On the other hand, urbanization in Poland almost tripled in the years following its EU accession. Between 2000 and 2018 nearly 20% of all Europe's urbanization occurred in Spain, followed by France with 15%. In the last period from 2012 to 2018, the UK took the lead.

Map 3.1 Development of urban use in relation to population development



To what degree does this urbanization meet a demonstrable demand? To investigate this, Map 3.1 shows the rate of urbanization over the 2000-2018 period in relation to population development. This analysis lends credence to the claim that current trends are unsustainable. Even areas with depopulation usually still show increases in artificial surfaces. The main areas where population growth exceeded urbanization were Belgium, northern Bulgaria, Romania and Switzerland.

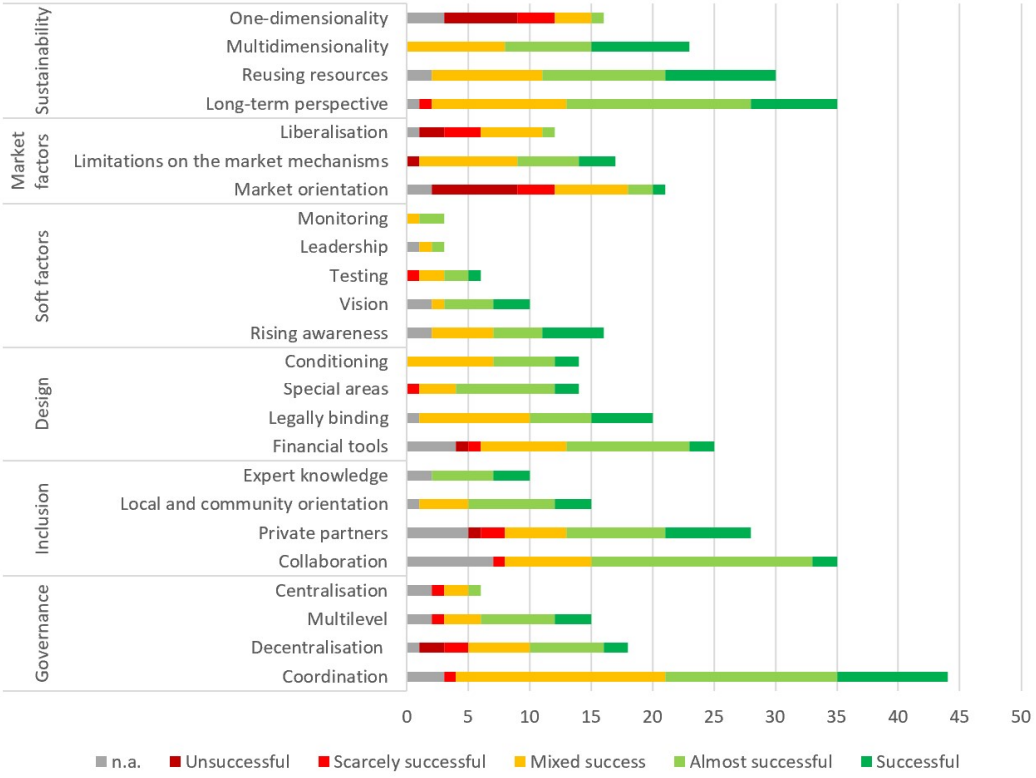
An important caveat is in order. Our main dataset, Corine Land Cover, can overlook small-scale development. When combined with population data this could result in drawing the erroneous conclusion that urbanization is highly efficient and sustainable because it makes use of existing built-up areas. In fact, homes are still being built, just not being registered. Rather than urban containment, diffusion could be occurring.

4 Evidence on interventions

The SUPER project compiled a database of interventions in Europe that affect, or try to affect, urbanization and land use. The 235 identified interventions were found using desk research and an online survey and classified according to type (containment, densification), instrument (regulation, strategy), territory/scale, and other dimensions.

This database was analysed to distil factors for success and sustainability. The analysis revealed that these were highly context dependent: one type of intervention (e.g. a growth boundary) could be successful in one region and unsuccessful somewhere else. Further investigation discovered over 40 different factors, grouped into 7 categories, were relevant for determining success and sustainability. The most salient of these are presented in Figure 4.1.

Figure 4.1 Intervention success factors



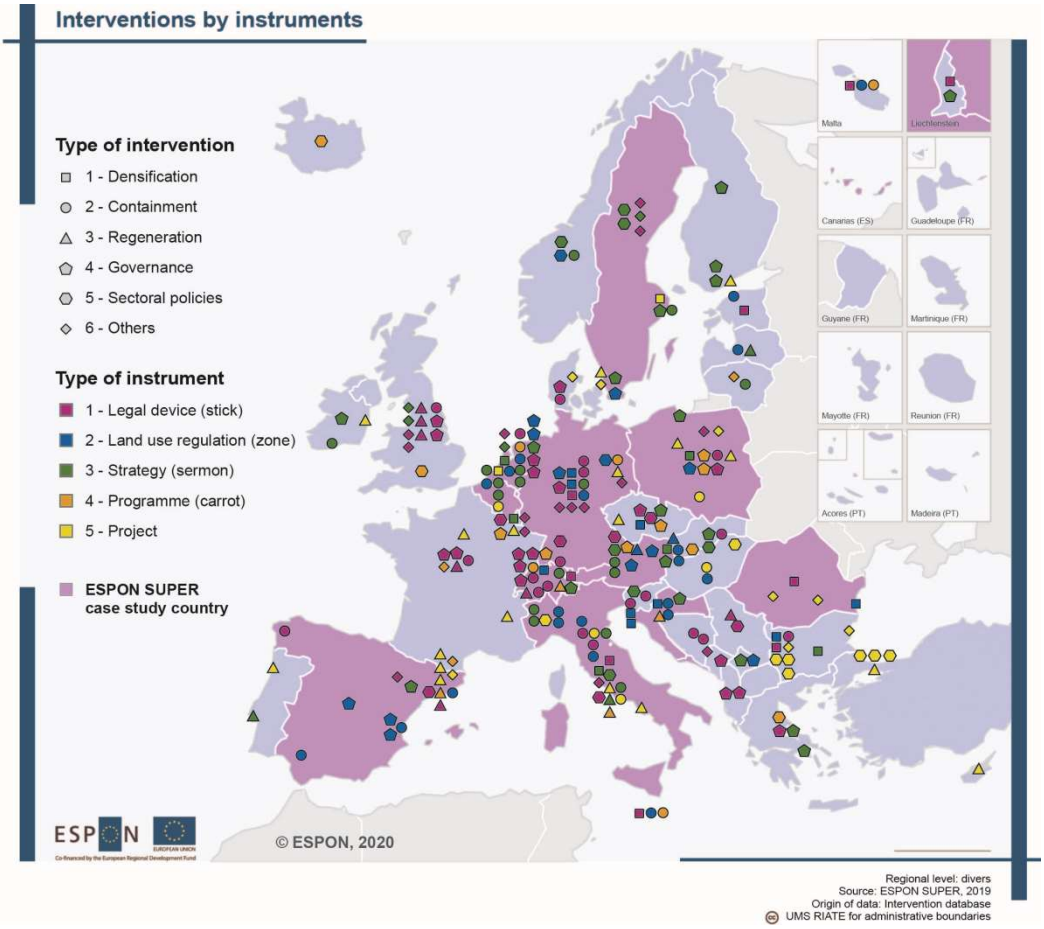
Although the SUPER project did not discover guaranteed recipes for success, the many individual examples of interventions and their accomplishments can provide inspiration to policymakers. Examples include a national infill development programme in Luxembourg, permission to add extra floors in Malta, urbanization caps in coastal Spain and fiscal rules in Italy and Estonia. The analysis also revealed that EU policies can and do have an impact on urbanization and land use, but that the more powerful policies have a more indirect effect.

5 Evidence on practices

The 'black box' of local practices is the crucial link between observed drivers (e.g. economic and demographic trends, and interventions) and the observed outcome of changing land use. Local practices are determined by the interaction of stakeholders over time, and therefore requires in-depth knowledge. To study these practices in context, the SUPER project carried out 11 case studies which highlighted the impact of a particular intervention. Over 100 in-depth interviews were carried out with key stakeholders, network analyses carried out and sustainability assessments performed on key documents.

The selection sought to maximize diversity: the cases are at differing levels of scale, are geographically spread out (see Map 5.1) have differing territorial characteristics and differing types of interventions.

Map 5.1 Case study locations and other interventions analysed in the SUPER project



To a greater or lesser degree, all case study interventions transformed the way in which land-use planning is perceived and practiced, both among institutional stakeholders and the general public. This suggests that the interventions can and do affect urbanization and land-use practices. Both the successful and the less successful experiences offer valuable lessons in this regard:

Sticking with your planning tradition is not always a bad thing.
For instance, it has allowed the city of Stockholm to keep building on the positive experience of over 50 years of socially and environmentally conscious urban planning and Swiss citizens to be actively involved in decisions that affect the quality of their living environment.

Breaking with planning conventions can also pay off.
Several successful interventions in countries like Austria, Belgium, Italy and Spain demonstrate that cooperative strategies and more open decision-making processes are slowly replacing development decisions based on competitive self-interest and led by a single authority.

Winning over hearts and minds with planning jargon.
All studied interventions have left a mark in the way the population is aware and often involved in land planning and development processes. Several stakeholders have internalized rather specialized vocabulary and arguments in their everyday practices and discourses, but a demand to make the planning language accessible to everyone persists.

Beyond participation, engagement and empowerment.
Many of the studied interventions reportedly fostered a greater sense of co-responsibility in managing spatial planning through robust participation processes. For this to happen, participation needs to be taken seriously in planning actions. The Austrian and the Swedish case studies can be considered best practices in this respect.

From regulation to (regulated) integrated planning.
This pattern is most visible for initiatives led by local and regional administrations than upper scales. In spite of the general trend of distancing spatial planning and development from regulatory conventions, a basic set of binding norms is deemed essential for many interventions.

Learning from experience.
No case entirely succeeded in decoupling economic growth from land take, regardless of location, planning tradition or affluence. Still the interventions contributed to the construction of experience, knowledge and, through a change in mindset, laid the groundwork for more sustainable land-use practices.

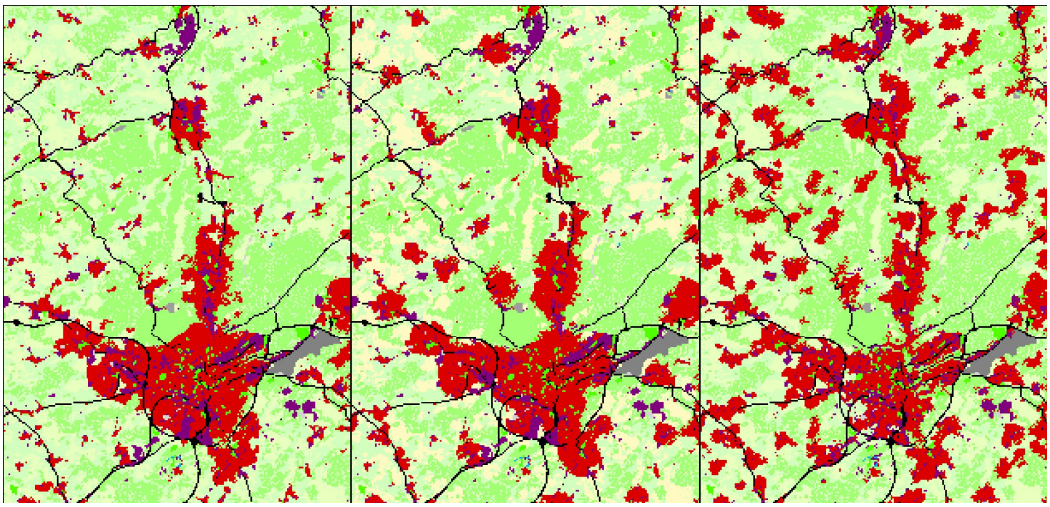
Dream big and seize opportunities.
Innovative instruments promoting collaboration based on a collective vision seem to be more successful. A public cartographic database to support optimal allocation of uses, financial compensation and redistribution schemes, and an agricultural land bank are specific innovations identified in the case studies.

Work in tandem:
The role of the EU. Many cases were influenced by the EU, either because they were born of a communitarian mandate or through EU directives, principles, ideals, etc. In particular, EU-standards for public participation, environmental protection and institutional accountability provided a positive stimulus in several cases.

6 Future development pathways

The SUPER project drew up three scenarios based on different urbanization pathways. The scenarios hold external factors constant (e.g. demographic and macroeconomic development, technology and climate change), so it is societal attitudes that account for the divergence. These scenarios were visualized using the LUISETTA land-use allocation model designed by the EU's Joint Research Centre.

Map 6.1 Luxembourg in 2050 in the compact (l), polycentric (m) and diffuse (r) scenarios



The **compact scenario** posits that, starting in 2020, a policy of urban containment is promoted throughout Europe to avoid the wasteful, haphazard urbanization which had resulted in the destruction of natural resources and undermined of the vitality of cities. To achieve this, a selection was made from policies that had proved successful in the past plus some innovations. In particular, the goal was to have half of all demand for urban land be accommodated within the existing urban fabric and the rest near large cities. By 2050, empty spaces in and near larger cities had filled up.

The **polycentric scenario** posits that, starting in 2020, a policy of urban clustering is promoted throughout Europe to avoid both the disadvantages of haphazard urbanization, which had resulted in the destruction of natural resources and undermined of the vitality of cities, and urban containment which would create big-city problems. A careful selection was made from sustainable urban development policies that had proved successful in the past plus some innovations. In particular, the goal was to have a third of all demand for urban land be accommodated within the existing urban fabric and the rest in towns, preferably near rail stations. By 2050, public transportation and urban development were increasingly built in tandem.

The **diffuse scenario** posits that, starting in 2020, a policy of urban diffusion is promoted throughout Europe to allow and encourage countryside living. It was felt that citizens should have more control over where and how they wanted to live. To achieve this, planning decisions were simplified and land-use controls relaxed. Self-empowerment was stimulated by generous fiscal arrangements for homebuilding, private transport, and energy independence. In particular, the goal was to have all demand for urban land be accommodated along roads in the countryside. By 2050, housing had displaced agriculture in high-growth regions.

7 Conclusions and recommendations

The conclusions of the SUPER project are a result of discussions within the project team and the ESPON sounding board. Unfortunately, the planned activities with stakeholders to validate these results have been severely disrupted by the COVID-19 pandemic. Bearing this in mind, we have five points we would like to put on the agenda for discussion.

FINDING

Learn from the past and the future

Urbanization can largely be explained by population and socio-economic development. Still, this pressure is always mediated by local development practices. In the case studies we have often seen that interventions are reactions to developments or practices deemed undesirable or unsustainable. Given this, the foreseen economic crisis following the COVID-19 pandemic should resonate in future land-use decisions, ultimately changing the map of Europe.

Depending on how the pandemic affects public opinion, we could see radically new housing and business location preferences, which would shift urbanization pressure to new locations. This underlines the importance of making and using policy scenarios such as those drawn up in the SUPER project to explore the (dis)advantages of different developmental trajectories (e.g. compact, polycentric and diffuse). It also provides a basis for discussion on the synergies and trade-offs with respect to sustainability.

FINDING

Interventions can and do affect urbanization and land use

The SUPER project found that it is possible to design interventions that adjust the payoffs or orientation of stakeholders, and thus their behaviour in the development process, to more sustainable ends using a combination of carrots, sticks and sermons. The database is replete with examples that raise costs associated with greenfield development or lower them for regeneration and infill.

Even though it is impossible to measure the impact of such interventions on land-use developments (there is no control group to tell us what would have happened otherwise), the case studies do provide insight into this matter: stakeholders involved in the development process overwhelmingly asserted that interventions had an impact on standard development practices.

FINDING

European policies can support or undermine sustainability

The analysis of EU policies has shown that, despite having no formal competence for spatial planning, there is substantial evidence showing it has a substantial impact on urbanization and land use. We can therefore posit that if the EU wishes to prioritize sustainable land use, it should seek to align its own policies to this end. For example, the EU could help reduce the land consumption of the structural funds by making sustainable land use a precondition for financial support. A step further would be for the EU to help member states develop more sustainable urbanization and land use practices, for example by offering information about best practices. The SUPER Guide to sustainable urbanisation and land use can be considered a first step in this direction.

FINDING

Territorial differentiation needed

it is difficult to make overall judgements about sustainability at the pan-European level because the distribution of developments is highly heterogeneous. For example, we observe signs of agricultural intensification in some parts of Europe and agricultural abandonment in others. We see strong urban growth in some parts of Europe and decline in others. In addition, the effects of these developments are highly heterogeneous, and often entail a local trade-off between different dimensions of sustainability. For example, an increase of urban fabric per capita suggests more living space and improved housing affordability (social sustainability) but less efficiency in terms of land consumption (environmental sustainability). Similarly, the analysis of interventions shows very little regularity in terms of what works and why. Successful interventions in some regions fail in others. This suggests that generic targets or one-size-fits-all regulations have only limited value for steering urbanization and land use.

FINDING

Proactive long-term holistic thinking aids short-term implementation

For electoral reasons, it is often tempting for politicians to focus on quick-fix solutions to concrete and urgent problems rather than addressing complex long-term issues that require a more holistic approach. The case studies signalled a clear need for interventions to be embedded into a clear and comprehensive strategy or vision that covers all relevant topics and involves all relevant stakeholders.

A vision can allow the intervention to be viewed as part of a wider strategy where land-use decisions are not made on the basis of opportunism, expedience or jurisdictional politics. Instead, they are viewed as optimizing land uses in terms of thematic sustainability and leading to a better future (temporal sustainability). Broad-based interventions, if they are successful in achieving their goal, seem to have the best chance to be sustainable in all three dimensions.

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