

ESPON Policy Brief

Reuse of spaces and buildings

1 Introduction

In many cities population growth generates increased pressure on urban land uses and on the relation between core cities, suburban and rural areas. This could lead to uncontrolled urban sprawl with negative impacts of soil sealing, decreased natural areas causing habitat fragmentation, as well as reduction of highly productive agricultural soils. Urban sprawl is generally considered to be unsustainable and leading to, for example, increased travel time and transport costs, pollution, environmental degradation, intensifying segregation and undermining the vitality of existing urban areas.

Reusing spaces and buildings can be seen as an effective way to reduce urban sprawl and its environmental impacts and to keep neighbourhoods occupied and vital. It is therefore considered to be an attractive alternative to new construction or to using non-sealed soil in terms of a circular economy. In the spirit of a circular economy, **industrial areas in transition** and deindustrialisation deserve particular attention. Abandoned industrial installations could be dismantled and either sold for reuse or recycled and industrial sites could be reused. Vacant buildings could also be adapted to new circular industrial and non-industrial uses, or be transformed into public spaces, thereby contributing to regenerative spatial and urban planning. In the process towards sustainable urbanisation **green infrastructure**, incorporating green (and blue) spaces and other physical features in terrestrial and marine areas, should be considered as well. It contributes to the environmental vitality of urban areas and can reduce energy use for heating and cooling buildings by shading in summer and providing shelter in winter.

Member and Partner States have **distinctive territorial development strategies and spatial planning systems** in place leading to considerable differences regarding the size and spatial distribution of urban development functions varying from the formation of more compact cities with intensification of urban services to an urban sprawl and suburbanisation outside the core urban areas. Territorial development strategies and spatial planning systems have been highly influenced by the Leipzig Charter on sustainable cities, followed by the Thematic Strategy on the Urban Environment. In addition, research showed that the EU Urban Agenda has tangible local impacts through the inspiration of integrated urban regeneration plans, inter-municipal partnerships, or sustainable urban strategies. Also cohesion policy can be a facilitator. Based on the principle of subsidiarity, it is up to the individual government to use the best delivery mechanisms to implement plans.

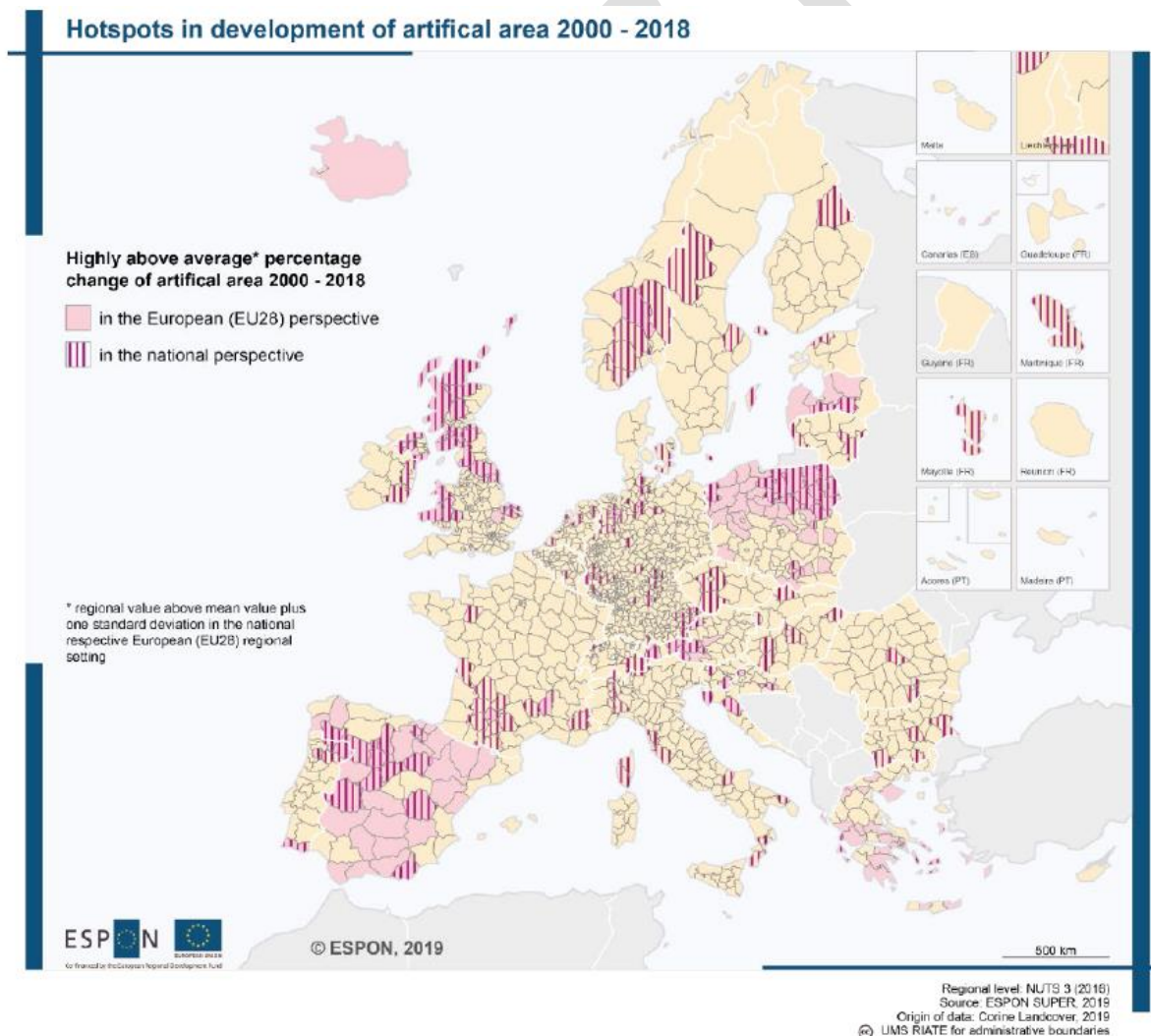
This ESPON policy brief aims to help European, national, regional and urban authorities to better understand how to reuse more spaces and buildings in order to create a more sustainable urbanisation. It addresses and illustrates various ways to use instruments and tools, among which circular economy models, for the reuse of spaces and buildings. This policy brief aims to support discussions surrounding the reuse of spaces and buildings in terms of the transition towards a circular economy at intergovernmental level during the Croatian Presidency of the Council of the European Union's (EU's) first semester of 2020.

2 The situation today

To reduce the loss of soil functions and ecosystem services the European Commission (COM(2011) 571)) has proposed within the 7th Environment Action Programme to have policies in place by 2020 to achieve ‘no net land take’ by 2050.

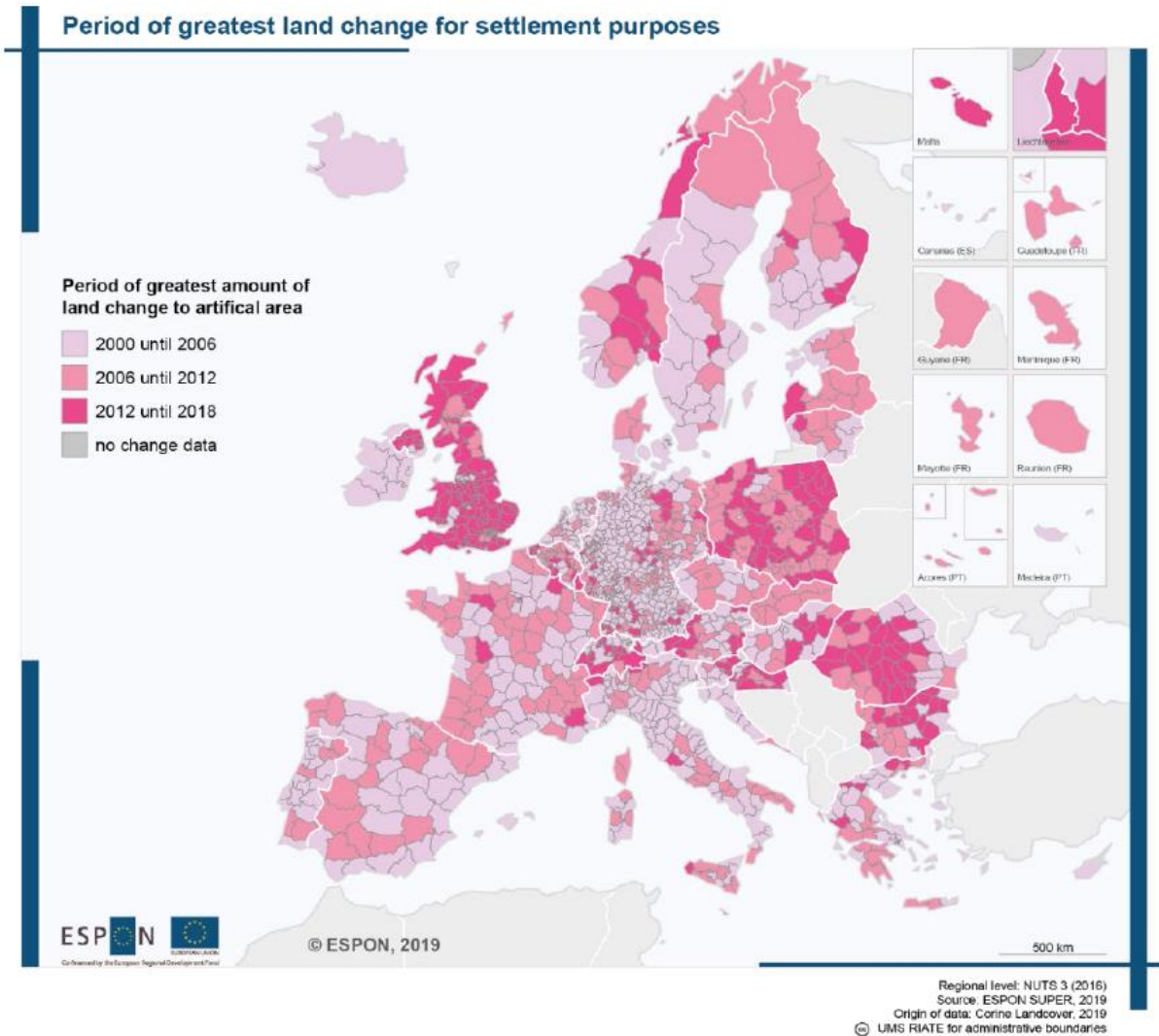
Corine data shows that over the period 2000-2018 approximately 1,263,000 ha were converted to urban land use, that is 44% of all changes. As a result, artificial land cover increased from 19.2 million to 22.6 million hectares, an increase of 13%. Map 1 shows the ‘hotspots’ of absolute levels of urbanisation in Europe. It identifies those NUTS3 regions which converted the most land to urban use with respect to the European average, the national average or both. Many regions in Spain, Poland and the UK can be identified where relatively great swathes of land were urbanized in the 2000-2018 period. New urban land mostly came from agricultural land (78%), although in Scandinavian countries (except Denmark), Croatia, Greece, Iceland and Portugal this was nature. Only in Romania (-0.8%) and Bulgaria (-0.1%) the share of urban land decreased between 2000 and 2018.

Map 1 Hotspots of artificial area development



During the 2000-2018 period the rate of urbanisation has decelerated somewhat (see Map 2). This can partially be explained by the EU expansion in 2004 and the 2008 economic crisis: 44% of all conversions to urban use took place in 2000-2006, 35% in 2006-2012, and 21% in 2012-2018. Some countries were exceptions: throughout the UK, in Switzerland, Malta and in large parts of Poland and Romania, new urbanisation predominantly took place after 2012.

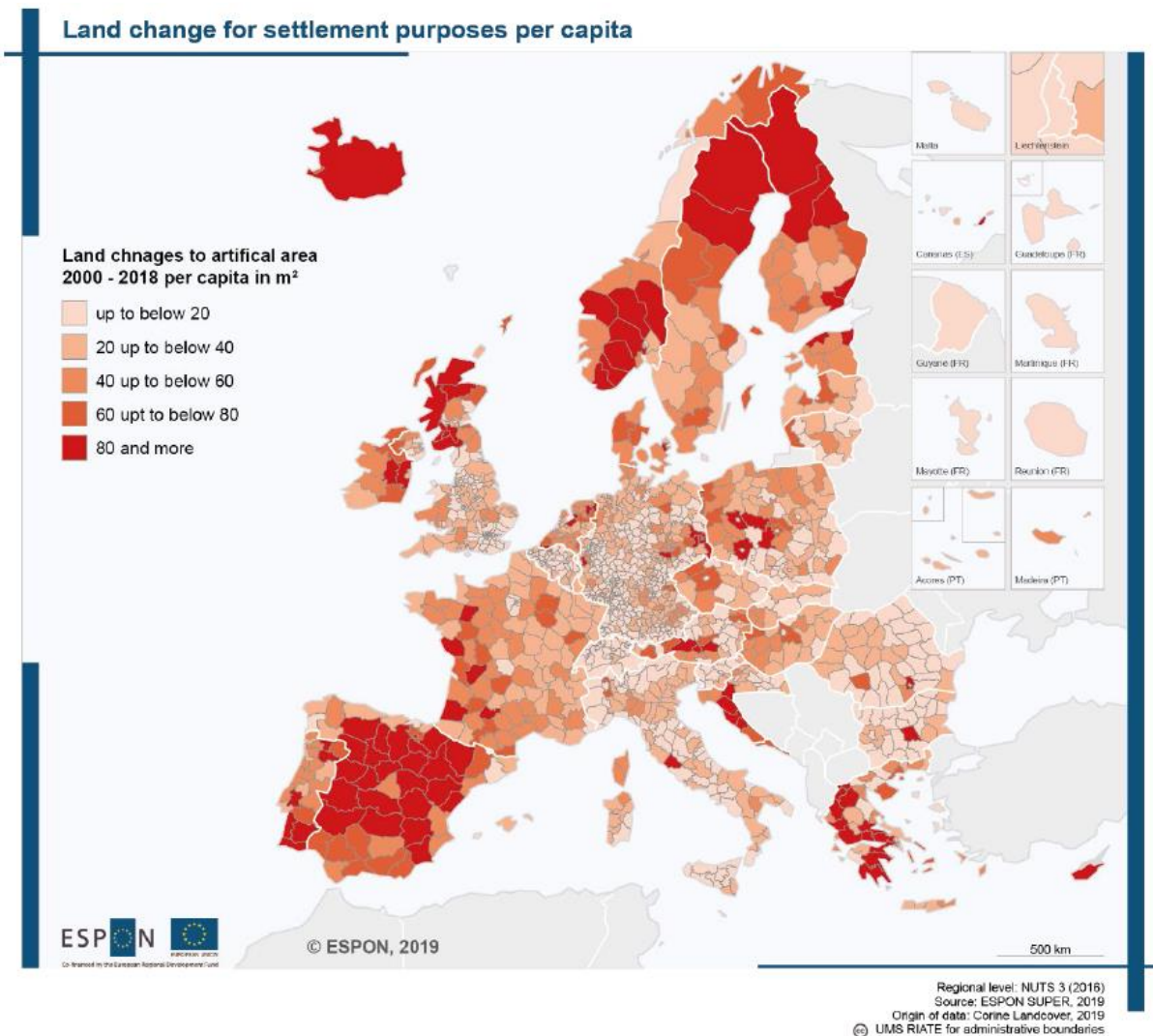
Map 2 Period of greatest change to urban use



Urban sprawl has existed for a long time, but nowadays the policy discourse centres on the concept of sustainability and politicians are looking to spatial planning to manage urban growth. There is a palpable concern that current planning decisions and practices are negatively impacting future generations and undermining long-term economic prosperity, social cohesion and ecological vitality.

One way to measure urban sprawl is to compare the production of artificial surfaces (land take) with the population growth. Map 3 shows that during 2000-2018 the land take exceeds the assumed need (population growth) in Europe. In addition, even areas with depopulation usually still show increases in artificial surfaces. The main areas where population exceeded urbanisation were Switzerland, Romania, Bulgaria and Belgium. Given that Corine may overlook small-scale development, these cases will need to be evaluated with more scrutiny in order to ascertain whether this is a result of compact high-density urban development (e.g. re-urbanisation) or extremely scattered development which was rendered invisible.

Map 3 Urban sprawl measured as land change for settlement purposes per capita



To escape the binary world of ‘no net land take’ versus ‘urban sprawl’ and avoiding the normative meanings of these two terms, the ESPON SUPER project discerned three archetypical modes of urbanisation: urban containment, concentrated urbanisation and diffuse urbanisation:

- **Urban containment** (i.e. high-density compact cities) is a strategy to restrict urban growth to already built land and encourage infill development and brownfield redevelopment inside the urban area.
- **Concentrated urbanisation** (i.e. medium-density urbanisation) is linked to smart growth, a concept that seeks to integrate economic, environmental, and social aspects of planning and development and encourages mixed land-use patterns and transit-oriented development.
- **Diffuse urbanisation** (i.e. low-density scattered urban development) is very similar to what is commonly referred to as urban sprawl (see above).

Figure 1 Urban containment (Valencia), concentrated urbanisation (Leidschenveen), diffuse urbanisation (near Zagreb).



Source: SUPER, 2019

An important driver for urbanisation is economic development. Many European port cities are experiencing relocation of their port-related activities from central areas to other locations. The moving of this economic activity is leaving deteriorating inner city areas and the cities face major challenges in securing regeneration and re-integrating these areas back into the city DNA. The ESPON ENSURE project analysed 144 of these port cities (focusing on small and medium-sized) and learned that 96 of these cities have experimented with implementing some form of port-city regeneration. Three ways of regeneration implementation could be identified:

- **Unified vision** (54 cities): an overarching strategic line of development based on a coherent vision, masterplan or other strategic document;
- **Incremental approach** (16 cities): evolved either on a project-by-project basis or in separate phases over significant periods of time
- **Emergent / nascent pattern** (26 cities): plans or policies are in place but concerted implementation has not yet got underway

Map 4 shows the spatial distribution of this implementation typology. Each of the three typologies has its own challenges including: managing the tensions between master-planning versus more flexible planning; the benefits of a 'big-bang' regeneration impact versus a more organic evolution; and how to progress from effective planning to efficient implementation.

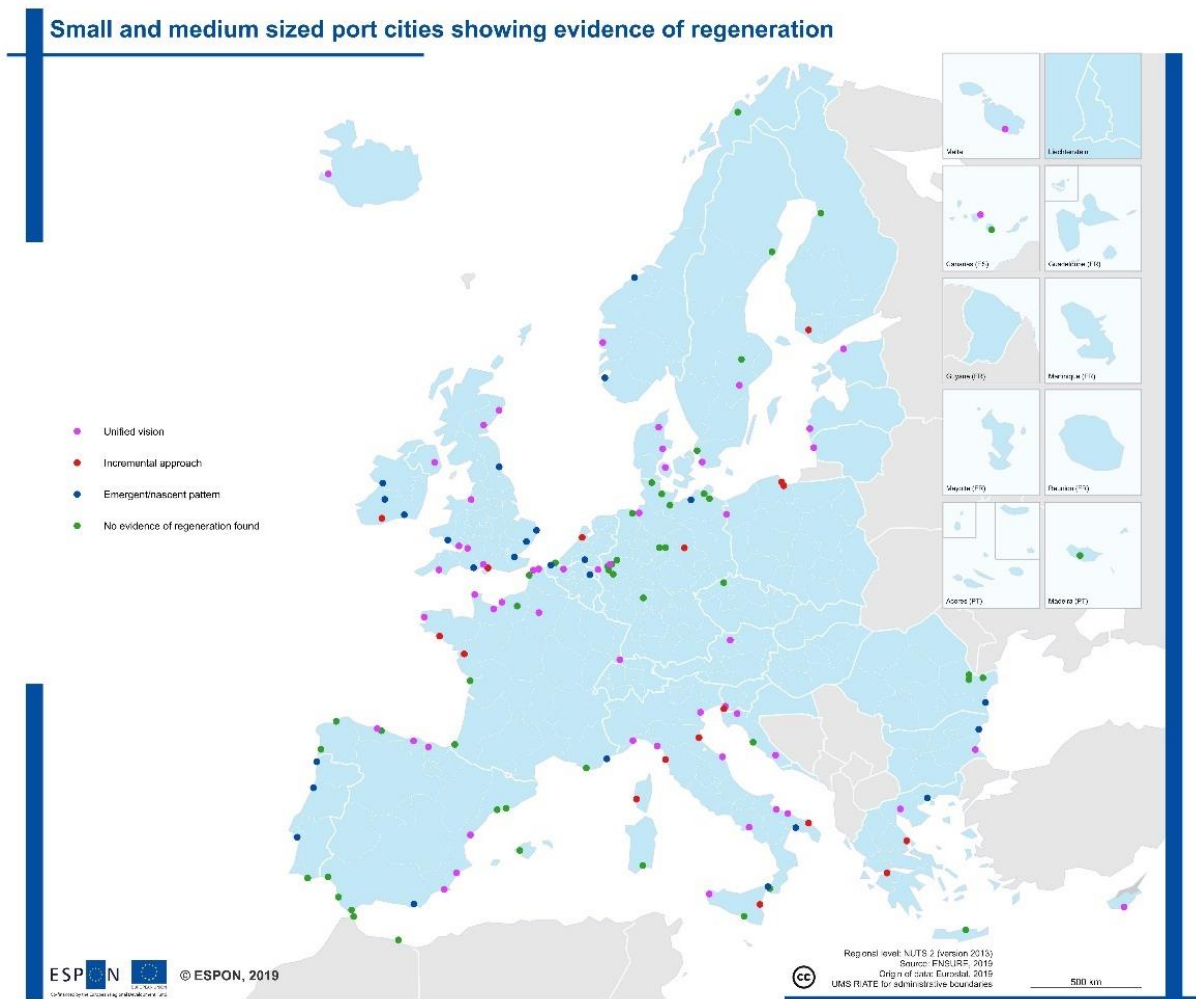
Case 1 *Port-city regeneration following a unified vision in Split (HR)*

The Split city decided to regenerate the brownfield sites along the Riva seafront promenade, located close to the port and overlooked by Diocletian's Palace, a UNESCO World Heritage site. In 2005, the Split City Council created a vision for the waterfront generation to create liveable and vibrant spaces by regenerating spaces around existing port functions. They launched a competition for redeveloping the waterfront following precise stipulations with regard to respecting its historic and cultural value.

The catalysts for redevelopment were the City Council vision for waterfront regeneration and the commitment of both the city and the state through funding.

The Riva promenade project is now completed and includes a public square that acts as a space for social events, sports events, religious processions, festivals and celebrations. It also re-integrated the port and the city and strengthened the traffic infrastructure and identity of the city.

Map 4 Small and medium sized port cities showing evidence of regeneration.



Regeneration can provide an opportunity to enhance the volume and role of green infrastructure in the urban environment. More and more it is being realised that the presence of green spaces, natural and semi-natural areas contributes positively to sustainable urbanisation in cities. **Urban green spaces** deliver a variety of ecosystem services to improve mental health and well-being, mitigate urban heat island effects and provide sustainable transport options (e.g. walking and cycling lanes). A good example is Thessaloniki (GR) that has added 2353 new trees, 118432 new plants and 58.75 acres of green space to the urban environment to support the development of a greener and more sustainable city profile. However, the ESPON GRETA project showed that during the period between 2006 and 2012 for 99.5 % of the European cities studied (around 500) the share of urban green spaces was stable or decreasing. Actually, only three cities showed an increase in urban green spaces over that period, i.e. Faro (PT, 3.3 %), Nice (FR, 2.3 %) and Capelle aan den IJssel (NL, 0.7 %). The importance of green spaces in the urban environment is apparently only recent.

3 Supporting and hindering factors for sustainable urbanisation

Urbanisation is the outcome of myriad collective and individual decisions made by humans about where and how they want to live, work and play. Therefore it is important to identify the main relevant cause-effect relationships governing urbanisation and land-use change. What are the supporting factors driving urbanisation? What are the factors hindering policy to steer towards sustainable urbanisation? And how can we measure sustainable urbanisation?

3.1 Driving factors

Urbanisation is influenced by many drivers. Key drivers for urbanisation are demographic: people migrating from rural areas to cities and people using more residential space per capita (e.g. larger houses, less people per family). But also economic and societal drivers should be considered. The ESPON SUPER project developed a more complete overview of drivers distinguishing two groups:

1. Demand based drivers:
 - **Demographic:** population change, household size and migration dynamics.
 - **Economic:** GDP/GVA growth (especially regarding commercial space), macroeconomic trends, access to credit and level of household savings, welfare-state regimes, vitality and agricultural sector consolidation and accessibility.
 - **Societal and technological:** housing type preferences (apartment versus detached), tenure preferences, transport preferences (car ownership), social norms regarding cohabitation and second homes.
2. Supply based drivers:
 - **Land characteristics:** suitability, land price, profitability of land-use conversion, strategic land ownership, legal rights to develop, designated area (floodplain, natural habitat or industrial zone)
 - **Physical barriers:** mountains and water bodies

It should be noted that these drivers are interlinked and intersected between demand and supply of urbanisation, therefore it is not straightforward to consider them separately. In addition, each driver has a different effect on sustainable urbanisation, which can be positive or negative.

A driving factor that has a negative effect on sustainable urbanisation is the **price of undeveloped land and green fields** for new development. These are in general too cheap, while redevelopment of already urbanised land is too expensive (e.g. regeneration of brownfields). This discourages the revitalisation or recycling of built space generating derelict land. It also has a strong impact in flat areas of fertile land where accessibility generates a conflict of uses leading to a marginalisation of agriculture. However, in the long run, redevelopment of urbanized areas and containing new development is the only sustainable approach. To increase the competitiveness of redeveloping already urbanised land, there is a need for the implementation of a complete package of measures, including economic, legal and fiscal incentives.

Industrial areas in transition and deindustrialisation deserve particular attention in the spirit of a circular economy. Vacant buildings could be adapted to new circular industrial uses (waste treatment and separation, composting, etc.) and non-industrial uses (e.g. residential, agricultural), or be transformed into public spaces (art galleries, co-working spaces, community-centres, repair markets, etc.), thereby contributing to re-generative spatial and urban planning. A hindering factor for reusing abandoned industrial sites, however, could be that these sites have in most cases serious problems of **contamination** leading to high costs for remediating these sites.

Case 2 Economic development as driver to regenerate deindustrialised sites in Dunkerque in (FR)

Dunkerque (France) is a key economic asset for France in terms of renewable energies. It has become home to Europe's largest energy platforms, accommodating nine different forms of energy generating companies including wind farms, a nuclear power plant, subsea gas lines and coal. The city has used the energy platform to re-brand and market the city for foreign direct investment. To attract workers and companies, regeneration of deindustrialised sites into mixed uses of housing, amenities and open spaces is required.

Source: ENSURE, 2019

3.2 Hindering factors

Besides understanding the drivers of urbanisation, it is also important to understand the risks and challenges that could be encountered when redeveloping already built-up area.

The ESPON ENSURE project investigated multiple port-city regeneration programmes and one of the most significant challenge identified is **governance arrangements**. The cities reported diverse experiences in relation to multi-level governance frameworks, ownership structures in terms of land and port functions, and the role of private sector actors. They showed clear trends towards public-private partnerships or other forms of joint arrangement. In general, regeneration requires the involvement of an array of stakeholders and managing multiple interests is challenging.

Challenges for redeveloping already built-up area, each illustrated by an example, are the following:

1. **Competing economic functions:** During the early phase of regeneration in Calais (FR), the model proposed was to infill urban regeneration around existing port functions. Key challenges included how to co-locate residential and leisure functions in proximity to noisy, and sometimes polluting, industrial functions.
2. **Governance:** Port-city regeneration entails an array of stakeholders and managing multiple interests appears to be challenging. More top-down governance models were found in Bilbao (ES) where a development agency 'Bilbao Ría 2000' has been created to oversee project delivery. In Malta (MT) high-level support for the development of a new cruise terminal was economically a success but led to the erosion of local resources. A more bottom-up approach was used by Aarhus (DK) which has been experimenting with new forms of cooperation between public and private actors to ensure a mix of functions and types of residents.
3. **Funding models:** In Brest (FR) the availability of EU structural funding has been critical and the combination of supra-national, national and regional funding has been a key catalyst.
4. **Environmental change:** Regeneration involves the transformation of industrial, often polluted or contaminated, land to land uses such as residential, tourism, or leisure. Le Havre (FR) is an example of successful remediation of Seveso sites from former industrial uses. Remediating contaminated sites also presents financial risks or challenges in terms of who will fund the necessary works. In Cork (IR) it is anticipated that the private sector will fund remediation which can result in significant development delays. In Brest (FR), on the other hand, the industrial and military ports were remediated by public agencies and the military itself.
5. **Landownership:** In general terms, coordinating a coherent plan of urban regeneration was easiest for those cities where the port and waterfront lands were in public ownership. However, areas can have a "fuzzy" tenure or can be owned by government but not occupied by a legitimate government function preventing a timely regeneration. Bilbao (ES) is an example of entrepreneurial urban regeneration. Here the state intervened through a development agency to take control of vacant land, and then used public and speculative private investments in the waterfront to transform the use, function and economy of the city.
6. **Infrastructure provision:** When striving towards sustainability, investments in public transport will be a key challenge to achieve successful regeneration projects. Dunkerque (FR) based regeneration plans on the new urban areas being as car free as possible.
7. **Changing urban identity and functional use:** To stimulate different kinds of uses and attract new users to what were often 'no-go areas' broader cultural shifts in the identity of these areas are necessary. Such cultural transitions have been facilitated by rebranding initiatives and the development of flagship or landmark facilities – for instance, the Guggenheim in Bilbao (ES), La Carene concert hall in Brest (FR) or the proposal to build a cable car and aquarium in Tallinn (EE).
8. **Speculative urban development:** Urban regeneration projects in general have a speculative nature. In cities such as Cork (IE) and Norrköping (SE) the implementation of port-city regeneration was negatively affected by the 2008 global financial crisis, while in Reykjavik (IS)

the new regeneration plan is seen as one of the first to signal economic recovery after that country's crisis.

9. **Interface within the wider metropolitan, regional and transnational context:** In case the urban regeneration project is of disproportionate importance to the wider region and national scale the nature of the regeneration project can be driven by national or regional determinants rather than the needs of the immediate, local area. The regeneration of the Belfast (UK) waterfront, for example, was an important element in the development of a post-conflict discourse about the city. The top-down approach taken, however, had significant exclusionary effects on the surrounding neighbourhoods and districts.
10. **Public participation, engagement and cohesion:** In Reykjavik (IS) and Aarhus (DK) the public were engaged at the earliest stages to generate ideas. However, even where the public are involved and support an idea, success is not guaranteed. In Turku (FI), a test project to co-locate urban and port activities is underway but while broadly supported, it is proving challenging to convince citizens to relocate to the area.

Case 3 Private investments leading to diffuse urbanisation in Valencia (ES)

Huerta de Valencia experienced great development pressures between 1996 and 2008, manifested by expanding urban centres, industrial areas and scattered housing. Land developers, generally private businesses, bought cheap rural land from farmers or other owners. In general, flexible development procedures emerged for 'projects of economic regional interest' resulting in scattered and diffuse urbanisation, often leapfrogging over suitable sites.

Source: SUPER, 2019

3.3 Measuring sustainable urbanisation

The ESPON SUPER project has gathered interventions that, in one way or another, affect land use and thus influence its sustainability in one or more countries in Europe. Because some of the interventions were not targeted at sustainability but could be successful (and efficient, effective and relevant) in achieving their goals (e.g. in official evaluations), a **framework using two perspective** has been developed to assess the success of these interventions: (1) success according to the scope of the intervention itself (i.e. its own aims and goals) and (2) success from the point of view of sustainable land use. Regarding success from the point of view of sustainable land use four situations can be distinguished:

1. Intervention meets sustainable goals in all three dimensions (i.e. economic, ecological and social);
2. Intervention meets sustainable goals in one or two dimension(s) and is neutral in the other(s);
3. Intervention meets sustainable goals in one or two dimension(s) and has adverse impact in the other(s);
4. Intervention does not meet sustainable goals in any of the three dimensions.

From a sustainable land use perspective, the intervention described in the first situation should be considered successful, even if the scale of advance in all three aspects is not equal. The second situation requires more consideration because stagnation in one dimension and advance in others could be problematic. The third situation should be considered unsuccessful because it entails a trade-off or decline, and the last is obviously unsuccessful.

The three modes of urbanisation (urban containment, concentrated urbanisation and diffuse urbanisation) have variegated impacts on sustainability. The framework described above and an extensive literature review has been used to estimate the various effects of these three modes on sustainability. Table 1 presents the findings in a synthetic way (+/- usually means conflicting findings between studies). Summarised, one can say that many of the outcomes confirmed suspicions:

containment was seen as being ecologically sustainable in terms of land-use efficiency and mobility (travel distance and mode) and diffusion contributed to fragmentation and was unsustainable in terms of maintaining high-quality public services and amenities. However, there were also counterintuitive results, such as the socio-ecological unsustainability of containment due to concentration of pollution and climate-change impacts and the social sustainability of diffusion due to housing affordability, less heat island effect and living close to nature.

Table 1 Modes of urbanisation and aspects of sustainability

	Urban containment	Concentrated urbanisation	Diffuse urbanisation
Economic sustainability			
GDP, wealth	+/-	++	+
Public finance	++	+	-
jobs	++	++	+/-
Accessibility	+/-	++	+/-
business areas	++	++	+/-
Housing demand / new construction	-	+	+
Transportation costs	+/-	+	--
Energy consumption	+	+	--
Ecological sustainability			
reducing mobility (by car)	++	++	--
reducing pollution, including CO2	++	+	--
green urban areas	-	+	-/+
biodiversity	+/-	+/-	--
Land consumption	+	+	--
Natural hazards - risk and vulnerability	-	+	+/-
Climate change mitigation/adaptation	+/-	+	+/-
Consumption of resources	+/-		-
space for future renewable energy	+/-	+/-	+/-
space for future water retention	+	+	+
space for future circular economy	+	+	-
Social sustainability			
health	+/-	+/-	+/-
affordable housing	+/-	+/-	++
equity/inclusion	+/-	+	--
public and recreational space	+/-	+	+/-
variety (high-rise, suburban, etc)	+	+	+
mixed-use areas	+	++	-
Quality of life	-	+	++

Source: SUPER, 2019

4 Instruments and tools for sustainable urbanisation

Sustainable urbanisation can be steered by territorial governance and spatial planning interventions, such as (spatial) strategies, instruments and mechanisms (financial, fiscal and economic) from the European to the local level. The Urban Agenda partnerships on the Circular economy and on the Sustainable use of land and nature-based solutions developed together a handbook providing a wide review and analysis of good practices of urban re-use (UAP, 2020). It lays the foundations for an overall strategy looking at a new model of urban re-use management following the principles of a circular economy.

The ESPON SUPER project has gathered a collection of 227 interventions that, in one way or another, affect land use and thus influence its sustainability in one or more countries in Europe. Each of the collected interventions has been described using a large variety of aspects, under which the type of intervention and the type of instrument used. Of the 227 interventions gathered 29 were regeneration interventions (13%). Regeneration interventions were relatively more often used in urban and monocentric urban areas and less often in rural areas. In addition, regeneration interventions were found to be the most successful according to sustainable goals and dimensions.

No unified framework for policy tools exist to effectively implement an urban planning approach. However, based on literature study the ESPON SPIMA project distinguished six key categories of policy tools, which are: **1) strategic, 2) coordinative, 3) structural, 4) procedural, 5) financial and 6) collaborative tools**. The metropolitan areas investigated indicated that coordinative and collaborative policy tools showed most benefits in addressing many of the key challenges of the stakeholder areas as they aim fostering a shared-governance process at metropolitan scale. The procedural/financial policy tools were the least widely applicable and the strategic and structural policy tools take an intermediate position. This section provides more details and examples for these tools.

4.1 Strategic tools

Strategic tools aim at developing joint strategies for the future development of the areas. The common principle of strategic tools is that one can use them to devise and employ a set of multiple policy objectives and long-term measures in such a way that these reinforce each other in different policy issues and administrative levels of planning. This can be done by raising political awareness and achieving commitment between different groups of decision-makers via strategic visioning of metropolitan development. Strategic tools will in general result in integrated policy documents such as strategic plans for metropolitan development or strategic territorial cohesion plans at regional and local level. When using strategic tools one has to pay particular attention to link strategic plans to problem-driven governance and translate them into a set of specific actions and outcomes in the planning processes.

Benefits of strategic policy tools:

- Ensuring institutional support at a higher level of government by developing joint strategies and visions regarding metropolitan territorial development.
- Mobilizing various actors that have a high impact on the pursuit of metropolitan collaboration, i.e. the strongest 'pressure groups', including the European Union and the national state.
- Developing policy frameworks: policy agendas for urban sustainability, formation of joint strategies and plans.
- Supporting strategic decision of national importance in addition to the decentralization process and development of economies of scale.
- Dealing with competing claims in land-use planning at the local level. Relieving the tension between municipal land-use planning and higher level land-use planning by strategic planning. Gaining political support in addressing trade-offs and facilitating negotiation between landowners, businesses and local governments to maximize the public benefits of urban developments.

Strategic planning underpins a holistic, inclusive, participatory and integrated planning approach. In the presence of complex governance systems and with many stakeholders it is preferable to use a strategic approach. This will structure the interaction between subjects in the decision-making process, harmonize various plans and integrate transformation. The challenge is to set-up not only a strategic plan for the area integrating the three major issues of sustainability, i.e. economic (for profit), social (for people) and ecological (for planet) but also to manage a long-standing development. A strategic plan has to find concrete answers to current problems of people's lives, which in turn becomes the best certification of the effectiveness of its procedures. It is proposed to be incremental and adaptive when following five converging and interacting domains:

1. The spatial domain e.g. to establish urban quality as growth engine, develop connectors for rural areas or contribute to conserving cultural and landscape resources.
2. The management domain to define processes and tools for agreements between actors, aiming at co-planning and at achieving and implementing the objectives, as well as identifying assessment systems.
3. The economic domain to identify the necessary capital ensuring feasibility and to create added value from the interaction of different capitals (financial, human, social and territorial).
4. The regulatory domain to define rules aimed at protecting choices over time or in case of leadership changes.
5. The communicative domain to promote the covenant of community among the various subjects for a collective empowerment towards the future.

Case 4 Strategic development for harbour conversion in Copenhagen (DK)

The South Harbour (Sydhavn) of Copenhagen wanted to transform a former industrial harbour area into a modern urban neighbourhood with offices and new housing as a way to attract new residents to an ageing city.

Mid 1990s Sydhavn was designated as a focus housing area in a Municipal Plan; it was initiated when the City of Copenhagen was under significant economic stress and the project was conceived as part of a larger strategy to reinvent the city, to utilize the quay sides and former harbour areas to create attractive urban environments. The main rationale behind the project has been economical but included social aspects and social policy (i.e. the production of attractive housing for the middle class but also to certain degree production of social housing) and to a lesser extent environmental. In this case the municipality was not a land owner (however, the development corporation was a main land owner) and instead also had to depend on private organisations to develop the land but also to provide public facilities, which was secured through different arrangements under the Planning Law. In addition to the statutory planning instruments a comprehensive plan was developed by the major land owners and the municipality, which also formed the basis for later local plans. It can be seen as a soft-governance tool which does not have any formal power but symbolic, representative and communicative power.

The transformation was considered a mixed success in relation to scope of the intervention due to the lack of cultural institutions and recreational spaces. This can partly be explained by the institutional design and market-led approach. The sustainable land use goals were considered quite successful because the project has produced a dense urban area.

Source: SUPER, 2019

The reuse of spaces and buildings can be considered as one of the **strategies for circularity**. It belongs to the group of circular strategies that are less radical but help to reduce raw materials' and resource consumption, and thus positively impact our environment by extending the lifespan of products and their parts. THE ESPON CIRCTER project indicated that it is key to connect such a strategy with clear

policy actions and funding means ownership of the strategy and gathering political buy-in. Involving the leadership of public administrations such as regional governors, mayors or prefects would give more weight to the priority setting process. Of course, depending on the regional context, the outcomes of this stage can be further subjected to the regional or local political legislative processes in city councils, or regional councils, which can provide the final endorsement of the strategy.

Case 5 Regeneration as part of the Circular Economy Strategy of Maribor (SI)

The city of Maribor aims to carry out urban regeneration by public and private investments in public and complementary spaces to raise the quality of life for the citizens. In addition they aim to activate local social and economic potential by setting up projects involving circular business models and local food production. Finally they aim to further develop sustainable urban mobility by developing an urban cycling infrastructure and multimodal public transport.

In June 2018 the Council of Maribor has approved its Circular Economy Strategy. The basic idea of this Strategy is a modular system for managing all the resources available in the municipality and wider urban environment. One of the seven pillars of the strategy is related to urban regeneration.

Source: CIRCTER, 2019

4.2 Coordinative tools

Coordinative tools refer to establishment of dedicated coordination bodies for joint preparation of plans and strategies. The common principle of coordinative tools is that one can use them to establish bodies to coordinate metropolitan developments across political and administrative layers of government. This can be done by implementing coordinated decision-making: centralized/ decentralized or multilevel coordination. Coordinative tools will in general result in supervision authorities e.g. a metropolitan body, inter-organizational committees or management bodies. When using coordinative tools one has to pay particular attention to achieve efficient coordination between institutions leading to shared planning practices between specialized departments and levels of government.

Benefits of coordinative policy tools:

- Establishment of coordinating bodies to guide the process of metropolitan development by mobilization of various levels of governance to coordinate actions or strategies.
- Transfer of functions that require a certain expertise and collaboration not available at local level towards to a coordinating body, with local leaders represented, while at the same time municipalities remain independent with their own mayors.
- By means of coordination mobilizing and organizing relevant actors' in the development of land-use plans, initiating negotiation between landowners, businesses and local governments.

Multi-level and multi-agency governance turns out to be a key feature in the city regeneration projects. For this, both horizontal (inter-municipal) and vertical (multi-level) coordination is needed. To achieve sustained and enhanced metropolitan planning over time, both a collaborative environment among the local governments and well aligned policies and initiatives between levels of governments are needed. This tends to have both a political and a technical dimension in the spatial planning and decision-making. It requires well established and accepted communication channels to synchronize different strategies and spatial plans. Higher level government plans need to be consistent with local government plans, and metropolitan decisions should also be reflected in local spatial plans, based on close and iterative consultations and a shared governance process.

Independently of whether the process is mainly bottom-up or top-down, it is the local constituents who will be most affected by any **new metropolitan institutional structure**. Cooperation among local governments may be encouraged by incentives or even demanded from a regional or national

government through inter-governmental systems, legal frameworks, or specific financial incentives. However, cities' experiences show that no governance arrangements become effective and sustainable unless the local governments involved are actively supporting the arrangements.

Case 6 Planning by coordinating municipal agglomerations in France (FR)

The French model for planning by coordinating municipal agglomerations is an innovative example that combines top-down and bottom-up elements: the national level creates the legal framework for strategic inter-municipal cooperation. Joining such bodies remains a voluntary decision by municipalities.

Source: SPIMA, 2019

Shared metropolitan governance is seen as the way forward in coping with the fact that decision-making processes and democratic power may not reflect the reality of current actual spatial developments. 'Real life' may already have gone beyond the formal spatial planning governmental structures. There is a need to move from these formal structures alone to a shared-governance modes, which allow collaboration about the actual urban functional developments in the metropolitan areas. Currently, administrative jurisdictions across Europe do not neatly correspond to functional geographies, leading to a splintering of public policies and a mismatch between political geographies and the geographies of the networks of interrelations between people and businesses, from local to global scales. A **functional approach** to urban governance avoids this distortion and implies a greater emphasis on political institutions attached to territories with "soft" borders, or no borders, delineated according to a given policy field, and overlapping with other functional areas and at different scales.

ESPON has always been a strong advocate of functional approach in planning. This approach allows development processes to be captured and steered at geographical scales that are not bound by administrative borders but reflect the realities of increasing interconnections among places based on mobility of people, goods and services. The functional approach requires a stronger cooperation among places and, in turn, stimulates their development perspectives at least in two ways:

- allowing them to increase the resource base that is needed to serve people's well-being needs;
- ensuring the efficiency of investment through their coordinated use and avoiding wasteful/overlapping investment.

Therefore, the functional approach in planning, governance and investment policies helps to promote the development potential of places, including coping with and adapting to the outward labour mobility and brain drain, through more efficient, multi-level governance that responds to development challenges in a more holistic and inclusive way.

Case 7 Strategic and functional approach for regeneration in Turin (IT)

Turin aims to be transformed and rebalanced from an industrial area to a touristic and attractive one. Their key challenge is to introduce a regeneration strategy that is based on a flattening of hierarchies, cross-sector collaboration, and coordination of efforts between all 316 municipalities.

In 2014 a National Act has formulated ten metropolitan cities in Italy. The Metropolitan City of Turin (MCT) is one of these. The new MCT area is envisioned to have a clear subdivision of spatial areas based on functionality leading to reduced local fragmentation, a more coherent spatial structure of functions and flows and a more democratic representation of the different spatial areas within the large territory of the MCT. A complex analytical process considering many different boundaries and existing structures led to a formal division of the MCT into 11 Homogeneous Zones (not complying with the OECD-EC typology of functional urban areas).

The MCT authority has a strategic planning role and a coordination function across the municipalities within the MCT and is responsible for the overall strategic development of the territory. In November 2015 they started the process for the preparation of the Metropolitan Strategic Plan (MSP), addressing the fundamental needs of the metropolitan community and providing solutions to key problems. The MSP is expected to grow as a comprehensive and integrated approach to metropolitan planning and development.

Source: SPIMA, 2018

4.3 Structural tools

Structural policy tools imply enhancing collaboration between competent authorities, by restructuring planning departments to be able to coordinate efforts more effectively with other departments. The common principle of structural tools is that one can use them to formalize relationships, competences, responsibilities across sectoral governmental structures. This can be done by adapting new organizational structures (departments, expert teams) to address metropolitan development in the administrative practices of the regional and local governments. Structural tools will in general result in merged organizational structures and/or effective distribution of responsibilities among various organizations/ units of regional and local authorities and other relevant institutions. When using structural tools one has to pay particular attention to choose suitable and effective structural change in the regional and local administrations that can provide the capacities needed for metropolitan planning.

Benefits of structural policy tools:

- Establishment of an adequate institutional structure that will support the shift from a rigid (hierarchical) governmental system to a horizontal shared governance.
- Establishment of clear institutional structures such as consolidated bodies (departments, councils etc.) for metropolitan governance may allow for better coordination, collaboration and communication among relevant institutions and actors.

A **new metropolitan institution** or institutional structure will become effective if it has clearly defined responsibilities (i.e. not overlapping, easy to understand, etc.). The role of a metropolitan institution should be clearly linked to the activities of other local actors and levels of government. New metropolitan institutions, particularly if appointed by a higher level of government rather than elected by local communities, may create a “distance” between the government and the citizens. With a second-tier metropolitan government, it is critical to ensure that the public is well informed about and can easily distinguish what their local government and their metropolitan level government are responsible for, in order to keep them accountable.

Any new institutional arrangement at the metropolitan level needs to be supported by agreed **financial arrangements**. This may, for example, include formula-based sharing of service expenditures, coordinated revenue mobilization (e.g. through user charges, property taxes, earmarked taxes, etc.), or joint funding (or joint mobilization of the funding) for investments. This process may require significant analysis and negotiation since the strengths of the revenue sources – available to each local government – may differ significantly. In the case of a new regional authority or metropolitan-level government, it is critical that they have access to sufficient and reliable sources of financing to fulfil its mandates on a sustainable basis.

Case 8 New institutional structures for airfield conversion in Plzeň (CZ)

The city of Plzeň wanted to develop a former air field (technically brownfield) stretching from the border of the city towards its broader centre and restructure it into an industrial base for the city and consequently the region.

Early 1990s the former air field was identified as a potential development area. In 1995 a new local Plan was approved by the City Council of Plzeň. To extend the plan for the whole area a strategic development plan had to be prepared. This process was new for the city of Plzeň. At the beginning, the strategy was informal (tacit strategy) but this was soon transformed into official city policies, programme and planning documents (statutory local Plan). In addition, brand new institutional structures were established, e.g. City Planning and Development Office and Pilsen Holding, JSC.

The re-development was considered successful due to the achievement of the initial objectives. The industrial zone has become a location for more than 40 companies creating between 11-15 thousand jobs.

Source: SUPER, 2019

4.4 Procedural tools

The procedural tools have a top-down restrictive and controlling function for urban growth (e.g. land allocation and zoning regulations, land acquisition, land expropriation etc.). The common principle of procedural tools is that one can use them to set legal, mandatory mechanisms for metropolitan planning (e.g. regulations for establishment of metropolitan areas, statutory land-use regulations, etc.). This can be done by enforcing specific legal procedures by the regional and local governments based on top-down regulations and a compliance process. Procedural tools will in general result in environmental assessment and strategic impact assessment. When using procedural tools one has to pay particular attention to develop an effective regulatory framework that can ensure compliance between the different spatial (land use) plans of different authorities and support the decision-making process.

Benefits of procedural policy tools:

- Development of legislation or regulatory mechanisms by national or regional government dedicated to metropolitan planning can serve as the basis for legitimization of the status of the metropolitan areas. In some cases a top-down legislative approach may be the necessary precondition for setting up clear competences in metropolitan planning.
- Even if there are visionary spatial plans or strategies at the metropolitan level, the implementation of these plans can be weak. Specific regulatory mechanisms can be used to enhance the implementation process at local level. These include different categories of spatial plans, specific land-use arrangements, land acquisition tools, tax-sharing mechanisms, fiscal bonus systems, funding for major infrastructure investment, pilot projects (cross-border), etc.

Regulatory or procedural measures are one of the most important policy instrument that can be very effective in achieving specific targets or results. The transition towards a circular economy, for example, addresses environmental challenges that require strong state intervention. Regulatory instruments, such as **setting bans or targets**, can be instrumental in promoting this transition. Setting targets for developing brownfields over green land, banning unsustainable products or materials, etc. can be applied both on local or national levels.

Case 9 Brownfield development target in UK (UK)

The UK Government has set a target for at least 60% of new housing to be built on brownfield land by 2008. In 2008 housing development in brownfields areas has been more the 80%. However, the patterns and extent of brownfield land reuse for housing development vary greatly across the English regions.

Source: SUPER, 2019

Reusing spaces and buildings also involves handling construction and demolition waste that could potentially be reused. **Reusing Construction and Demolition Waste (C&DW)** is economically and environmentally viable on a very local level because of its high volume and high transportation costs leading to potentially negative environmental impacts. However, the quality of reused, recycled, remanufactured and repaired products is of growing concern. Regulatory measures seek to ensure the quality of these products, their processes, content, etc. in order to better promote products made of secondary materials. A well-established and successful case for this comes from the Netherlands and concerns the reuse of demolition and construction waste materials in road-building projects.

Case 10 Regulating quality of the recycled construction waste in the Netherlands (NL)

The main driver for recycling in the Netherlands is the solid framework of legislation banning the landfilling of many waste streams including Construction and Demolition Waste (C&DW). The safe use of recycled materials in road construction (and other applications in or on soil) is regulated by the Soil Quality Decree, which sets limit values for leaching.

Furthermore, several pieces of legislation (for instance concerning asbestos) assure that only non-hazardous inert waste arrives at recycling facilities. During the acceptance process at the gate of the recycling facility, a final check is performed to monitor incoming waste.

The requirements for use of materials in road construction are laid down in a national guideline, the Standard RAW Provisions. Recycled aggregates meet all requirements for safe application in road construction because the processing of good-quality recycled materials starts well before demolition. Furthermore, by requiring the use of mainly recycled C&DW instead of virgin materials from riverbeds or quarries in public road construction tenders, a large and steady market has been created. Today, close to 100% of waste from construction-and-demolition is recycled in the Netherlands.

Lessons: Ensuring quality of the secondary material is important in building consumer trust in the circular economy.

Source: CIRCTER, 2019 ([International Federation for Recycling](#))

The EU Directive on the energy performance of buildings¹ aims to reduce the environmental impact caused by public sector consumption via **Green Public Procurement (GPP)**. GPP can boost demand for circular materials, products and services both during the construction phase of a project, like buildings, roads, etc., but also during the project life, like renovation, consumables, etc. Construction is one of the key sectors for GPP, with criteria for covering raw materials, such as wood, aluminium, steel, concrete, glass as well as construction products, such as windows, wall and floor coverings, heating and cooling equipment, operational and end-of-life aspects of buildings, maintenance services, on-site performance of works contracts. The EU GPP criteria can be used to facilitate the inclusion of green requirements in public tender documents. Using GPP criteria in the process of reusing spaces and buildings can promote eco-design and design for recyclability, extended producer responsibility, waste prevention, reuse, and refurbishment. The European Commission GPP platform² offers many insightful resources, good practices and guidance on how to innovate towards circular procurements.

¹ Directive 2010/31/EU of the European Parliament and of the Council of 19 May 2010

² <http://ec.europa.eu/environment/gpp/>

Case 11 GPP for urban regeneration in Turin (IT)

In 2011 the City of Turin developed an ambitious and detailed set of environmental guidelines for the regeneration of the Barriera di Milano district. This Integrated Program for Urban Development covered 15 construction projects with a total investment cost of €35 million.

For all procurement activities related to the regeneration programme two types of environmental criteria were developed. The first type of criteria was related to the improvement of the local environment and significantly influenced the design in order to improve the usability of the final space, affecting overall environmental comfort and improving the habitability of the area and covered aspects such as the management of surface stormwater, use of local trees, green roofs and facades, and the durability of the materials used for surface coating. The second type of criteria was related to the life cycle impacts of construction elements and covered aspects such as the use of recycled materials, and the energy requirements of heating and lighting systems. These criteria were included in the tendering processes to promote the choice of products, techniques and technologies that are as innovative and environmentally friendly as possible.

One of the construction projects was the development of the new urban park of Spina4, on an area of 43,000 m² formerly occupied by car-industry buildings. Many sustainable features were included in the design based on the set environmental guidelines, such as photovoltaic panels, photocatalytic paving, LED lighting, and the use of recycled materials.

Source: Procuring innovative and sustainable construction solutions: European Public Authority Snapshots - ICLEI, 2012

4.5 Financial tools

The financial tools regulate developments through taxation, fiscal or subsidy systems, such as property or land use tax and compensation measures for landowners. The common principle of financial tools is that one can use them to steer legal, mandatory mechanisms for metropolitan planning (e.g. tax-based regulations, etc.). Financial tools will in general result in economic interventions such as charges and taxes for use of natural resources and land. When using financial tools one has to pay particular attention to develop an effective regulatory framework that can ensure compliance between the different spatial (land use) plans of different authorities and support the decision-making process.

Benefits of financial policy tools:

- Dedicated funding for metropolitan cooperation, with the conditionality that regional and local authorities can play a crucial role in initiating the metropolitan spatial planning approach.
- Establishing win-win economic stimuli for initiating metropolitan planning approach.
- Acquiring sufficient financing to support more extensive negotiations and consultation processes.
- Introducing a balanced taxation system to reduce tax competition.

The redevelopment of brownfields is often marginally or not economically viable as compared to greenfield development. To increase its competitiveness, there is a need for the implementation of a complete package of measures, including economic, legal and fiscal incentives. In the period 2000-2006, the **Structural Funds** expended for the EU25 were 2.25 billion EUR for the rehabilitation of industrial sites and about 2 billion EUR for the rehabilitation of urban areas.

Case 12 Using EU-funds for urban regeneration in Łódź (PL)

The city of Łódź has been dealing for a long time without local spatial plans which was considered a major problem for especially the city centre. The local authorities were motivated by the possibility of EU funding for revitalisation to deal with local spatial planning. A Revitalisation Committee consisting of different stakeholders (NGO, residents, entrepreneurs, etc.) was set up,

and a Local Programme of Revitalisation adopted. The result was the successful implementation of several major EU-funded investments.

Source: COMPASS, 2018

By integrating the circular economy in the urban regeneration projects access to regional, national and European financial flows related to Regional Innovation Strategies for Smart Specialisation (RIS3) could be obtained. In addition, stakeholder buy-in into innovative actions and projects could be enlarged.

Case 13 Using Interreg funding to support communication for brownfield redevelopment in Norrköping (SE)

The municipality of Norrköping, a medium sized city in the region of Östergötland, aims to develop its inner harbour area close to the railway station into an attractive urban neighbourhood and at the same time increase its transport accessibility. This brownfield urban redevelopment project requires remediation of the contaminated soil in the area.

To make underground pollution visible a new tool has been established with the use of Interreg project funding. This tool enables 3D visualisations of below ground level. Testing the tool with over 400 participants gave good results. The tool can be used in planning and decision-making process as a platform for communication between different stakeholders (citizens, planners, developers, politicians).

Source: COMPASS, 2018

Regeneration can involve significant costs and without public funding sources cities can become reliant on the private sector. On the one hand, this risks relying on speculative forms of development that may or may not be successful. On the other hand, an overreliance on private sector funding can result in risks related to inclusivity of uses and citizen buy-in.

Direct funding including loans, subsidies and grants for projects, business and infrastructure is a commonly used instrument across countries applied by governments of all levels. Regions and cities can adapt funding instruments to support the development of brownfields or urban regeneration projects. Most regeneration projects studied by the ESPON ENSURE project appear to have a **combination of public and private funding** underpinning their regeneration.

Case 14 Combining public and private funding for regeneration in Brest (FR)

In Brest the closing of some navy activities gave room for a valuable regeneration in areas close to the city centre. Planning documents have been prepared for the regeneration and the flexibility of the plans and a broad consensus among stakeholders has contributed to setting the basis for a positive implementation.

Brest métropole has been able to attract funding from higher administrative levels by dedicating personnel to positioning the city towards various funding programmes at national and European level in particular. Furthermore, the status of concerted planning zone in the commercial port area has meant that land owners had to pay a 'planning tax' on their real estate projects, which allowed the public sector to raise money for regeneration of the area's public infrastructure (roads, sidewalks, etc.). In addition, project financing often involved a diversity of public actors at different levels, driven by Brest métropole's ability to market these opportunities to attract private funding from real estate investors and developers. While public funding was the driver, private funding was

necessary to develop private real estate and activities including offices, housing and shops. This combination of supra-national, national and regional funding appeared to be a key catalyst.

The more general, overall goals and intended outcomes have been achieved, such as the regeneration of brownfields, the creation of new urban functions along the waterfront, and maintaining selected marine port activities. However, not all plans have been established, such as the planned green areas in the commercial port and all free views planned between the city and the sea and port due to the erection of higher buildings than planned.

Source: ENSURE, 2019

The ESPON ENSURE project recommends to enhance an efficient, innovative and complex financial model to support port-city regeneration. For regeneration projects in general it is important to balance public and private sector funding when putting in place an efficient, innovative and complex financial model. This leads to remembering that timing in attracting different types of funding is fundamental and that the availability of funding is always temporally contingent and dependent on economic cycles and the health of the public purse. Combining effectively supra-national, national and regional funding and managing the overall coherence and sustained implementation of the project is key for a successful regeneration project.

Using **fiscal incentives** or promoting specific types of businesses or investment in economic activities is rather popular in many countries. Governments have started to explore the use of these instruments to support green economic activities: for example, fiscal incentives to incorporate clean technologies in the production process are now available the Netherlands, UK, Basque Country, etc. Regions and cities, within their local taxation system, can apply fiscal incentives to promote investment in circular businesses and technologies.

The ESPON SPIMA project discovered that encouragement only from the national or regional level is often not sufficient to achieve concrete change in unsustainable areas. Often it is necessary to **design incentives** for metropolitan governance advances and the strongest incentives tend to be linked to financing. Any changes or enhancements to the current policies or frameworks for spatial planning and/or financing of the local government level need to be (or should be) considered at the same time to ensure that such policies are well aligned across the government levels.

Case 15 Incentives to increase roof greening in Linz (AT)

During the 60s and 70s Linz experienced an economic boom with high environmental degradation leading to a dramatic loss of green spaces and loss of quality of life.

The municipal 1984 Green Space Plan included, among others, incentives to increase greening in built-up areas in order to reduce air pollution. It was based on 4 pillars: 1) sound basic research 2) legally binding development plans 3) financial support and 4) information and advertising. The planning was strongly based on statutory instruments, while on the regional level more informal planning was pursued in the form of regional forums.

With the help of this plan and the incentives the city of Linz transformed into a post-industrial city and since 2008 has been officially recognised as the leading green roof city in Austria.

Source: SUPER, 2019

4.6 Collaborative tools

Collaborative tools finally aim at establishing specific collaboration efforts with equal participation of all affected stakeholders that lead to agreements about a specific plan.

The common principle of collaborative tools is that one can use them to establish collaborative processes between a wide range of actors with the ultimate aim to meet metropolitan development challenges. This can be done by involving multiple actors in a metropolitan planning process (across levels of government and policy sectors) via consultation, communication and negotiation between actors. Collaborative tools will in general result in collaborative establishments with participation of multiple actors. When using collaborative tools one has to pay particular attention to ensure effective and continuous communication and consensus-building between multiple actors in ever-changing institutional settings and in decision-making processes.

Benefits of collaborative policy tools:

- Supporting the involvement, participation and communication between actors across fragmented administrative structures of governance, to strengthen actors' interaction and their empowerment to engage in shared-governance networks for strategic envisioning, planning and implementing of metropolitan developments.
- Mobilizing existing collaboration efforts, such as transportation issues scaled beyond the city borders, to initiate cooperation in other policy issues.
- Creating top-down and bottom-up impetus for collaboration either by a formal recognition, financial support or collaborative agreements set by the governmental actors':
 - Top-down: in case there are complex conflicts of interest that may have an impact on a larger territories the role of the national government in initiating collaboration is important.
 - Bottom-up: groups of smaller municipalities, including communities and businesses, can be mobilized in a bottom-up approach around a policy issue or an area which can as well be scaled up to other actors' and governmental levels.

Involving all relevant actors in the process is key to ensure a successful regeneration activity. A first step is to understand who are the main actors, partners and stakeholders to work with and why. What are their relationships, and their views on metropolitan challenges and opportunities. One has to consider not only governmental actors across various levels and policy sectors but also resident groups, businesses, NGOs, environmental groups, research entities, etc. A second step is to determine how the stakeholders can be mobilised for the regeneration project. What's in it for them. Stakeholder involvement should start as early as possible, for example through opinion polls and dialogues on the design of the process itself. There may be particular situations when more concerted efforts should be made in seeking views and feedback from the local stakeholders, through various vehicles and media. It is particularly important that any costs or benefits are communicated in clear terms; and that any impact on residents is explained (for example, as public service users, as tax payers, as voters); and how the public will have access to any proposed new metropolitan governance process.

Citizen engagement has become a fundamental component of most planning and regeneration activities. For example, Norrköping (SE) engaged people through unique visuals called 'Earth Autopsy' as well as holding several community meetings and consultations throughout the process. Reykjavik (IS) held community meetings in every city quarter and ensured that the citizen's requests were heard and adopted in plans where possible. Basel (CH) has developed a monitoring group including citizens as well as other organisations. Their feedback is not binding but the administration is still obliged to examine and evaluate it.

Case 16 Policy design labs for temporary spaces in Lille (FR)

The European Metropole of Lille (MEL) counted more than 5000 vacant spaces, such as industrial wasteland, unused offices and unoccupied dwellings, and wanted to make temporary use possible either by internal management or through a third party.

A working group on temporary use consisting of 20 civil servants and 4 designers looked for an operational organisation on this issue. They started an "action-research" process by pretending a

public policy design lab was already operational and conducted several pilot projects as experiments leading to the gradual design of an actual public policy lab structure.

During this process the working group also benefited from the experience of the URBACT REFILL network. The 10 cities included in this network developed a Roadmap to temporary use. This roadmap has been used to establish a practice of temporary use in the city.

Source: REFILL URBACT, 2019

The cities involved in the ESPON ENSURE project showed clear trends towards **public-private partnerships** or other forms of joint arrangement. A main reason for this is the size, cost and complexity of waterfront and port-city regeneration projects. The public-private partnerships in these projects are for a large part linked to land ownership. But the role of private sector actors differ from country to country and occur within different governance systems, centralised and decentralised. Another factor for public-private partnership are innovative private initiatives. **Start-up movements** have proved to be an important source of innovation, economic opportunities, potential for prosperity and competitiveness in a region or city. Following this trend, it can be promising to promote sustainability and circular economy innovations by supporting innovation incubators and accelerators focusing on sustainable solutions and businesses. Existing practices can offer examples to follow and lessons to the regions and cities who planning their own start-up support programmes.

Case 17 Public-Private partnership in brownfield conversion in Plovdiv (BG)

In 2019 the idea arose to replace the non-functioning military production bases with a high-tech industrial park using the scientific potential of the city and the public-private partnership between the municipality, the state and the business.

The aim of the project is to recover the essential bonds between education, high tech and business. This will be done by promoting the perception of culture as a driving force and (creative) industry; by initializing effective public-private partnerships for successful management of cultural resources; and by creating conditions of on-going education and additional qualification of tourist and cultural managers introducing best-practice European/ECOC strategies and models. The Technology Park "Gladno Pole" is planned to be a new high tech park combining up-to date achievements of agricultural technology and education and providing a physical space for a business park the city is missing.

The project promotes a sustainable (economic, environmental and social) transformation of an underdeveloped area of the city, for example, by fostering cultural entrepreneurship to tackle unemployment.

Source: SUPER, 2019

Voluntary agreements between governments and industry actors can be an efficient way to complement the policy legislation in driving progress towards circular economy. Voluntary agreements and initiatives are widely used in a number of Member States and are considered an excellent tool to involve different stakeholders. They go beyond legal obligations and address regulatory barriers to projects/investments towards sustainability and encompasses energy-saving techniques, efficient water use, sustainable transport, alternative building materials and sustainable production systems in agriculture. Voluntary agreements can also be applied on local or regional level.

Case 18 Voluntary agreement and target in urban renewal in France (FR)

At the beginning of 2000s, there was the need to reconsider the French spatial planning system according to new needs and economic circumstances. A French law on Urban Solidarity and

Renewal (SRU) introduced in 2000 was based on planning coherence, urban solidarity, sustainable development a better integration between land use and transport.

The law decentralized planning to local authorities. Each commune was completely free to organise its urban development and act its own building rules. The communes were supported by local state services. Moreover, the law established that at least 20% of new dwellings should be dedicated to social housing. Finally, to counteract urban sprawl, the law invited to coordinate infrastructure system and public transport in order to reduce the use of private transport.

The law was considered less useful in terms of public transport and decentralisation, but useful for the development of social housing.

Source: SUPER, 2019

Engagement of cities and **city networks** is an important tool to establish benchmarking practices and identify where individual cities stand in dealing with metropolitan development, the challenges they face and the best approaches to meet these challenges. Local authorities need to be effectively informed about the future opportunities to adapt successful examples of sustainable development, service improvements or cost-effective practices. Sufficient resources, time and capacity are needed to conduct benchmarking reviews and develop comprehensive data and indices to measure the course of action of metropolitan development and the effectiveness of metropolitan governance.

Case 19 URBACT network used as inspiration for urban regeneration in Heerlen (NL)

Heerlen was once a thriving centre for the coal mining industry, but suffered economically after the mines closed. The last few decades, however, Heerlen has been proactive in promoting urban revitalisation, bringing various stakeholders together to work on improving the city's attractiveness.

Heerlen joined the URBACT CityCentreDoctor Network to transform ambition into action, and stimulate greater civic participation. In 2016 the city set up an URBACT Local Group and conducted a thorough place analysis and resident survey identifying the city's main challenges and aspirations. The municipality together with local stakeholders developed 26 ambitions for change, including: transforming vacant real estate for creative industries, redesigning city squares, enhancing greenery, restoring building facades, supporting street art, enabling year-round public events, and investing in a 'city lab'. The URBACT Local Group was involved in executing the 26 ambitions.

Evaluations show that Heerlen's city centre has become greener and more people are using public spaces.

Source: URBACT, 2019

5 Policy recommendations

To increase the reuse of spaces and buildings and create a more sustainable urbanisation the following is recommended to be considered:

- a) Identify the most important public and private stakeholders and **involve citizens and relevant stakeholders** in a focused idea generation process at an early stage. **Develop a long list of ideas** and set priorities on the background of a clear picture of the planning context.
- b) **Define opportunities, risks and constraints** to the future development and take a decision early in the process, either to keep industrial and urban functions separated or how to mix them. **Map the landowners**, identify their specific interests in the regeneration and assess the implications for the timing of the regeneration.

- c) Involve architects and planners and ask for **alternative land use plans**. Spend the necessary time and resources on the discussions and further improvements. Keep citizens and other stakeholders, including landowners and potential investors, actively involved in this phase.
- d) After drafting an integrated development vision and selecting a strategic plan, prepare an **outline time plan**.
- e) Decide what the roles and responsibilities in the process of the various public and private stakeholders. Make it clear **who is managing and coordinating the process** and make sure that this role is placed at a sufficiently high organisational level with a certain access to the financial resources.
- f) Break down the overall plan and **define the individual projects of the plan**. Involve technical and economic specialists for a further design and for the assessment of the economic and financial viability of individual projects and for the whole plan.
- g) Make sure that the necessary **land and financial budgets** are available. What are the necessary contributions from other public bodies and what may still be required from private investors. **Consider potential public-private partnership models** for the implementation and decide how the projects may be shared between public and private actors while keeping a satisfactory economic as well as financial rates of return.
- h) **Monitor and evaluate regularly** the implementation on the background of visions and goals, if possible as an integrated part of existing planning processes. Adjust the plan when needed for an improved outcome, but keep an eye on the financial and economic viability of adjustments that might be negotiated and decided.

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