ESPON

EUROPEAN UNION

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

Urban Impact Assessment Report

Implementation of the 2030 Agenda

The influence of SDG 11.3 on urban development through spatial planning

Based on a workshop carried out using the ESPON TIA tool

in cooperation with

European Committee of the Regions

13 June 2018

UN sustainable development goal SDG 11.3 is to *"by 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries."*

This urban impact assessment report is the outcome of an urban impact assessment expert workshop on the influence of SDG 11.3 on urban development through spatial planning in line with the EU's implementation of the 2030 Agenda, held by the European Committee of the Regions in Brussels on 28 May 2018. The workshop was commissioned by the ESPON EGTC in support of the CoR opinion on the "implementation assessment of the Urban Agenda for the EU", drafted by Kieran McCarthy, which is set to be adopted at the European Committee of the Regions' plenary session on 4 July 2018.

The ESPON TIA Tool is designed to facilitate the quantitative assessment of potential territorial impacts according to the Better Regulation guidelines. It is an interactive web application that can be used to support policy makers and practitioners with identifying, ex-ante, potential territorial impacts of new EU legislation, policies and directives (LPDs).

This report documents the results of the expert workshop, and the maps therein represent the views and experiences of the participants of the workshop. The report is for information purposes only; it is intended to be used solely to support decision-making and does not necessarily reflect the opinions of the members of the ESPON 2020 Monitoring Committee or the Committee of the Regions.

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States, and the Partner States (Iceland, Liechtenstein, Norway and Switzerland).

Information on ESPON and its projects can be found on www.espon.eu, where you can also download and consult the most recent documents produced by ongoing and finalised ESPON projects. These documents are only available in electronic form.

Contact: info@espon.eu

Authors

Erich Dallhammer and Bernd Schuh (ÖIR GmbH)

Igor Caldeira (CoR)

Rapporteur of the European Committee of the Regions

Kieran McCarthy, member of the Committee of the Regions, Cork City Council

Other institutions and organisations involved

ESPON (Zintis Hermansons)

DG Regio (Nicolas Gharbi, Eleftherios Stravropoulos)

Committee of the Regions (Gustavo López Cutillas, Mehmet Aşıcı, Felix Kalvelage)

Experts taking part in the TIA workshop

Adriano Oggiano – Director of North-East Urban Planning Office, Autonomous Province of Bolzano, Italy

Andrew Pritchard – Director of Policy and Infrastructure for East Midlands Councils, UK

David Cabrera Manzano – University of Granada, Spain. PhD in spatial planning and urban design

Elin Stening – Environmental Strategist, Urban Planning Department of Uppsala, Sweden

Gerhard Vittinghoff – Chartered Engineering Consultant in Town and Regional Planning, private company in Graz, Austria

Heléna Polomik – Policy Advisor at perspective.brussels

Isabel Guardabrazo Vallejo – Head of Service in the Town Planning Delegation, Marbella (Málaga) Town Hall, Spain

João Miguel Quintão – Head of the Urban Planning Division, Matosinhos, Portugal

Johannes Krassnitzer – Coordinator of the UNDP ART Initiative, Brussels, Belgium

Joris Scheers – Project Manager for the Flemish Government, President of ECTP-CEU, visiting professor at KU Leuven, Belgium

Kjell Nilsson – Director of Nordregio, Affiliated Professor of Planning and Management of the Urban Green Infrastructure at the University of Copenhagen, Denmark

Maila Kuusik – Spatial planner, University of Life Sciences; Board Member of the Estonian Association of Spatial Planners

Marina Ziakouli – Spatial planner, Urban Planning Department of Uppsala, Sweden

Markus Hedorfer – Spatial planner, private planning company in Venice, Italy

Marlène Siméon – Director of PLATFORMA, Local & Regional International Action

Paulius Kulikauskas – UN HABITAT - Brussels Office

Raul Perez Formigo – Independent expert from Madrid, Spain; MSc in Regional Policy and Urban Planning

Table of contents

List of Figures

List of Maps

Abbreviations

CoR	European Committee of the Regions
ESPON	European Territorial Observatory Network
EU	European Union
FUA	Functional Urban Area (classification of urban areas for statistical purposes)
GVA	Gross Value Added
IPCC	Intergovernmental Panel on Climate Change
LPDs	Legislation, Policies and Directives
NO_2	Nitrogen dioxide
NUTS	*Nomenclature des unites territoriales* (common classification of territorial units for statistical purposes)
ÖIR	*Österreichisches Institut für Raumplanung*/ÖIR GmbH
PM10	Particulate Matter 10 µm or less in diameter
SEA	Strategic Environmental Assessment
SDG	Sustainable development goal
SDG 11.3	Sustainable development goal 11.3: *"By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries"*
SME	Small and medium-sized enterprise
TIA	Territorial Impact Assessment
UIA	Urban Impact Assessment

1 Introduction

1.1 Implementation of the 2030 Agenda by the EU

The 2030 Agenda recognises the key role of cities in sustainable development and dedicates a specific SDG to Sustainable Cities and Communities, which is the subject of one of the first implementing agendas of the 2030 Agenda: the New Urban Agenda, adopted in Quito (Ecuador) in October 2016.

The population living in cities and metropolitan areas is expected to grow extremely fast in the period to 2050[1]. Three quarters of the European population lived in urban areas in 2014. From 2002 to 2012, the total EU-28 population increased by 3%, while population growth in capital cities was double that. Rapid rates of urbanisation trigger a whole range of urban and environmental problems, which could lead to a significant drop in quality of life for urban dwellers.

The New Urban Agenda is an accelerator tool supporting the implementation of the 2030 Agenda, especially goal 11 on "making cities inclusive, safe, resilient and sustainable" and goal 17 on "partnership".

Based on a European Commission communication on "next steps for a sustainable European future", on 20 July 2017 the Council of the EU adopted conclusions entitled "A sustainable European future: The EU response to the 2030 Agenda for Sustainable Development"[2], to show that the EU is committed to contributing to the implementation of the UN's 2030 Agenda for Sustainable Development.

In this context, the European Commission was urged by the Ministers to detail an implementation strategy outlining timelines, objectives and concrete measures to reflect the 2030 Agenda in all policies relevant to the EU. The European answer to the 2030 Agenda includes linking the SDGs to the European policy framework and current Commission priorities, and providing the UN with regular reports on the EU's progress. The Commission will take implementation forward with the Council and the European Parliament as well as through a multi-stakeholder platform with a role in the follow-up to and exchange of best practices on SDG implementation.

---

[1] According to the United Nations' World Urbanization Prospects (2014), approximately two thirds of the world's population will be living in urban areas by 2050. Three quarters of the European population lived in urban area in 2014, with 31.0% of Europeans living in towns and suburbs and 27.5% living in rural areas. From 2002 to 2012, the total EU-28 population increased by 3%, while population growth in capital cities was double that. For example, the population of Berlin grew by 2.3% while that of Germany declined by 0.3% compared to population growth in the EU in general.

[2] http://www.consilium.europa.eu/en/press/press-releases/2017/06/20/agenda-sustainable-development/.

For the first time ever, the CoR has launched an Urban Impact Assessment exercise to test the impact of EU rules on the spatial planning competences of local authorities within the framework of the New Urban Agenda and the Sustainable Development Goals 2030.

The result of this exercise will provide input for the CoR opinion on the "implementation assessment of the Urban Agenda for the EU" drafted by Kieran McCarthy and adopted at the Committee of the Regions' plenary session on 4 July 2018, and for the first EU report on the internal and external implementation of the 2030 Agenda by the EU, to be presented at the High Level Political Forum by 2019.

1.2 The approach of the ESPON TIA quick check

The concept of territorial impact assessment (TIA) aims to show the regional differentiation in the impact of EU policies. The ESPON TIA Tool[3] is an interactive web application that can be used to support policy makers and practitioners in identifying, ex-ante, potential territorial impacts of new EU Legislation, Policies and Directives (LPDs). The "ESPON TIA quick check" approach combines a workshop setting for identifying systemic relationships between a policy and its territorial consequences with a set of indicators describing the sensitivity of European regions. It helps to steer an expert discussion about the potential territorial effects of an EU policy proposal by checking all relevant indicators in a workshop setting. This guided expert discussion produces judgements about the potential territorial impact of an EU policy considering different thematic fields (economy, society, environment, governance) for a range of indicators. These results are fed into the ESPON TIA Quick Check web tool.

The web tool combines these expert judgements on exposure with the different sensitivities of regions, and translates them into maps showing the potential territorial impact of EU policy at NUTS3 or FUA level. These maps serve as a starting point for further discussion of different impacts of a specific EU policy on different regions. Consequently, the experts participating in the workshop provide important input for this quick check on the potential territorial effects of an EU policy proposal.

The workshop on "Implementation of the 2030 Agenda by the EU – The influence of SDG 11.3 on urban development through spatial planning" was held in Brussels on 28 May 2018;it brought together experts representing local and regional planning authorities, DG Regio, the Committee of Regions, and the UNDP ART Initiative.

Two moderators from the ÖIR, provided by ESPON, prepared and guided the workshop and handled the ESPON TIA tool.

[3] https://www.espon.eu/main/Menu_ToolsandMaps/TIA/

Figure 1 - Workshop Discussion

Source: Urban impact assessment expert workshop, Brussels, 28 May 2018 (ÖIR)

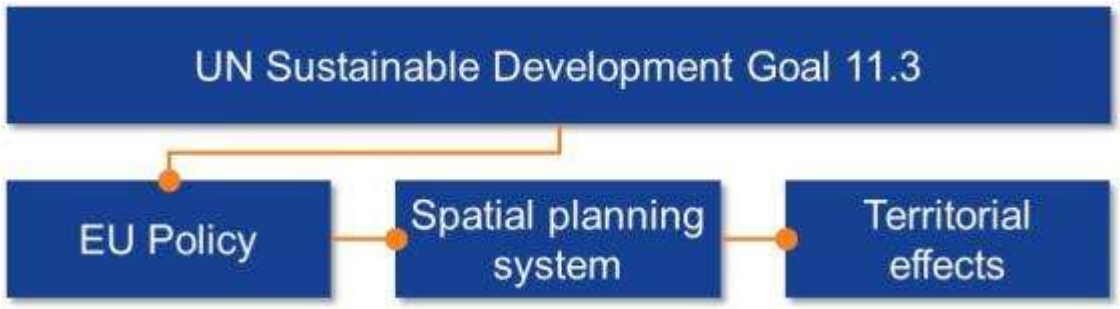
1.3 Focusing the topic of analysis

UN Sustainable development goal (SDG) 11.3 is to: "*By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries."* It aims at making spatial development more sustainable and more participatory. In order to measure progress, the UN proposed two indicators:

- Ratio of land consumption rate to population growth rate
- Proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically

The Urban Impact Assessment (UIA) on "Implementation of the 2030 Agenda – The influence of SDG 11.3" aims to assess the impact of the implementation of SDG 11.3 on European policies influencing spatial planning decisions in urban regions. As spatial planning falls within the competence of the EU Member States, the analysis needs to assess a relatively indirect causal chain: The effect of SDG 11.3 on EU implementation of the 2030 Agenda and consequently on EU policies that shape national, regional and local spatial planning policies, which in turn influence territorial development. (See the following graphic).

Figure 2 - Linking SDG 11.3 with EU policies, the national, regional and local spatial planning system and territorial effects.



Source: ÖIR 2018

A number of EU policies shape the spatial planning systems of the EU Member States. A file note commissioned by the CoR[4] identified more than 20 relevant European policies influencing spatial planning and described their contribution to target 3 of UN SGD 11 and to the New Urban Agenda. The relevant policies include EU Directives and Regulations, and intergovernmental cooperation policies set up at European level (see table below).

Name of Policy	**Type**	**Estimated impact**
Environmental Impact Assessment Directive	Directive	Clear impact: requires assessment of effects of projects in the field of urban development, industrial development and transport infrastructure
Strategic Environmental Assessment Directive	Directive	Clear impact: requires assessment of effects of plans and programmes for land use, town and country planning
Water Framework Directive	Directive	Marginal impact on spatial planning via creation of territorially based administrative units
Flood Directive	Directive	Clear impact: the effect of floods on human settlements has to be mapped, mitigation measures should include spatial planning action
Environmental Noise Directive	Directive	Clear impact: introduction of "acoustical planning" and "noise zoning" to reduce adverse effects of noise
SEVESO III Directive	Directive	Clear impact: danger to residential areas has to be taken into account by planning authorities
Waste Framework Directive Landfill Directive	Directive	No clear impact: only marginal effects on spatial planning, mainly targeting the organisational side of waste prevention
Renewable Energy	Directive	Clear impact: coordination between national, regional and

[4] Dallhammer, Erich; Böhme, Kai; Gaugitsch, Roland; Neugebauer, Wolfgang (2018): *Spatial planning and governance within EU policies and legislation and their relevance to the New Urban Agenda*. File Note for the CoR.

Name of Policy	Type	Estimated impact
Directive		local administrative bodies – including spatial planning – is to be ensured
Energy Efficiency Directive	Directive	Clear impact: exchange of experience between cities, towns and other public bodies; involvement of citizens in development and implementation integrated and sustainable energy efficiency plans
Maritime Spatial Planning Directive	Directive	Indirect impact: directive does not apply to town and country planning
Marine Strategy Framework Directive	Directive	Indirect impact: directive applies to marine waters, not to coastal waters or to town and country planning
Public Procurement Directive	Directive	Clear impact: design contests are traditionally used in the fields of town and country planning
Guidelines for trans-European energy infrastructure	Regulation	Clear impact: planning and implementation coordinated to generate synergies from a spatial planning point of view; ensuring that as little land as possible is taken up
ESI Common Provisions	Regulation	Clear impact: general rules for application of ESI Funds, minimum requirement of EUR 330 million for sustainable urban development, support for urban-rural linkages
ERDF Fund	Regulation	Clear impact: funding of projects in the field of spatial planning or with a spatial impact, introduction of an urban development network
EARDF Fund	Regulation	Clear impact: support for urban-rural links, support for local development strategies and plans, investment in basic infrastructure in rural areas
Guidelines for the development of the TEN-T	Regulation	Indirect impact: only marginal influence on spatial planning; stronger influence in Eastern Europe through strong relationship between TEN-T programme and EU cohesion policy; moderate influence due to the sectoral nature of transport
Leipzig Charter	Intergovern-mental coope-ration policy	Clear impact: integrated urban development policy, knowledge exchange between policy makers, practitioners, researchers at local, regional, national and European level; key areas: deprived neighbourhoods, public spaces, infrastructure, education, efficient and affordable urban transport
Urban Agenda for the EU	Intergovern-mental coope-ration policy	Clear impact: sustainable use of land, affordable housing of good quality, reducing poverty, urban-rural cooperation, citizens' participation

Name of Policy	Type	Estimated impact
European Spatial Development Perspective (ESDP)	Intergovern-mental coope-ration policy	Clear impact: polycentrism, urban-rural partnerships, parity of access to infrastructure, sustainable territorial development, conservation of natural and cultural heritage, cooperation between multiple levels of government and territories are suggested
Territorial Agenda of the EU	Intergovern-mental coope-ration policy	Clear impact: core topics are sustainable urban development, cooperation between urban and rural areas, security of access to basic services for the population, protection of natural and cultural heritage

Source: Dallhammer, Böhme, Gaugitsch, Neugebauer (2018): Spatial planning and governance within EU policies and legislation and their relevance to the New Urban Agenda. File Note for the CoR.

It would be impossible to analyse this variety of relevant policies in a one-day workshop, and the UIA workshop therefore needed to concentrate on concrete policy. It was decided to analyse what impact the influence of SDG 11.3 on the Strategic Environmental Assessment (SEA) Directive had on spatial planning systems. As the SEA requires an assessment of the effects of legally binding plans and programmes for land use, town and country planning, a clear link can be identified, depicting the impact of the EU policy on the development of cities through the implementation of spatial plans and consequently their effects on the ground.

2 The ESPON TIA Quick Check workshop – identifying potential territorial effects

2.1 Identifying the potential territorial effects – drafting a conceptual model

In the first stage of the UIA workshop, the participating experts discussed the potential effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning. They agreed that spatial planning faced the challenge that city planning authorities could draw up urban development plans, but did not have the resources to develop the projects needed to bring these plans to life. This was therefore done by private developers, meaning that competence, planning tools and resources for urban development were usually in different hands. Furthermore, competence for spatial planning was split between the European, national, regional and local levels, such that spatial plans had a relatively indirect influence on urban development.

Nevertheless, the discussion revealed potential territorial impacts of the implementation of SDG 11.3 in the fields it covers: inclusiveness, sustainability, resilience and safety. The participants identified potential linkages between the EU's application of SDG 11.3 in the SEA Directive and the effect on territories including interdependencies and feed-back loops between different effects (see figure below).

Figure 3 - Systemic picture identifying effects of the application of SDG 11.3 on the SEA Directive, spatial planning systems and consequently the development of cities.

Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

Concerning the fields mentioned by SDG 11.3 – inclusiveness, sustainability, resilience and safety – the participants raised the following issues:

Resilience

- The indicator “ratio of land consumption rate to population growth rate” proposed by the UN for measuring the impact of SDG 11.3 clearly shows that the SEA in the light of SDG 11.3 will focus more strongly on reducing land consumption and on slowing down urban sprawling.
- Due to reduced urban sprawl, more space will be available within urban areas to develop green infrastructure.
- More efficient urban development would also effect the economic development of cities.
- The trend is to densify within the already built urban structure, but even then, nearby green areas, or green areas of significant value, are at risk. It is important to consider compensating for greenery, significant green areas and so on in other ways or elsewhere.
- The social context of densification must be also taken into consideration. Where we build and how we build can create very different results and even affect the health of vulnerable citizen groups. From the sunlight that comes into existing apartments to air quality (even at the construction stage), such aspects need to be included.

Inclusiveness

- Spatial plans with a stronger focus on SDG 11.3 could result not only in less land consumption but also in more recreational areas available to city-dwellers, thus improving their quality of life.
- Migration to cities and the integration of the incoming people is an important issue that needs to be tackled. Cities are major target points for asylum seekers and poorer immigrants. Managing their integration and avoiding homelessness for the poorest is an important aspect of sustainable urban development. These varying demands must be addressed in the supply of housing.
- Different groups of people are affected differently by the implementation of spatial plans. This needs to be reflected in discussions on the effects of the SEA Directive on urban society. Some towns have developed a "social compass", an analysis of the current situation in different subareas within the municipality covering various factors such as employment, education, living conditions for children, democracy, safety, health etc. This is a tool that can be used to understand the social conditions in each area and to identify which population groups are most affected by the different planning proposals, or environmental consequences.
- SDG 11.3 aims to improve the structured participation of civil society in urban planning and management. The SEA Directive addresses some elements of participation as well. The capacity of urban planning authorities to run SEA processes efficiently is variable.

Consistently improving spatial planning systems to increase participation rates can lead to more efficiency and help to increase the quality of governance systems in urban planning.

Sustainability

- Higher urban densities and reduced urban sprawl makes it possible to provide attractive and efficient public transport. It was assumed that attractive public transport would effect a shift in transport modes from cars to public transport, reducing transport-related air pollution.
- Flexibility was an important aspect of this part of the discussion. In this context it can mean flexibility in terms of time, and thus the ability to plan for the long-term while at the same time not missing the needs of the here and now. What happens until a longer-term project is realised? But also, what happens when needs change in the future? The actions taken must be easy enough to adapt to different future situations.
- The aim should be to facilitate mixed uses in planning urban environments. Monofunctional urban settlements do not facilitate sustainable urban environments.

Safety

- Dealing with the threat of flooding is an important issue in town planning. It is very important for existing floodplains to be kept free of further development. These areas play an important role in maintaining safe urban environments. Future spatial plans and policies should limit the flooding risks.
- Here, too, the social compass is very relevant. One aspect of understanding and describing the environmental consequences must be understanding and describing which population groups are most likely affected by them.

The experts addressed the fact that some very relevant urban players and developments are bypassing and using shortcuts into urban planning instruments, such as e.g. AirBnB, e-commerce and Uber. In some cases a high number of relatively small developments, such as individual detached housing in the environs of cities, create stronger effects on the environment than one large scale project. Thus, the question was raised of whether the approach of setting thresholds for deciding whether an environmental impact assessment or an SEA needed to be conducted was the best way of capturing relevant factors influencing urban development.

2.2 Identifying the types of region affected

Urban regions can be defined in a variety of ways. Based on different data sources at European level, two different types of regions were used in the workshop to depict the effects on urban development of the SEA Directive in the light of SDG 11.3:

- Metropolitan regions[5]
- Functional Urban Areas (FUA)[6]

2.3 Depicting potential territorial effects through indicators

In order to assess the potential effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning, as pictured in the conceptual model, suitable indicators were selected related to the parameters discussed by the experts in the fields of resilience, sustainability, inclusiveness and safety. The availability of data for all NUTS 3 metropolitan regions and FUAs poses certain limitations on what indicators can be used. From the indicators available in the ESPON TIA Quick Check web tool, the participants chose the following indicators to describe the identified effects.

Depicting potential territorial impacts using resilience-related indicators

- Annual land take per inhabitant
- Built-up areas per inhabitant
- Green infrastructure per capita
- Economic growth (GVA/capita)

Depicting potential territorial impacts using inclusiveness-related indicators

- Quality and accountability of government services
- Recreational areas
- People at risk of poverty or social exclusion

Depicting potential territorial impacts using sustainability-related indicators

- Concentration of NO_2
- Concentration of PM10

Depicting potential territorial impacts using safety-related indicators

- Urban flood risk

[5] http://ec.europa.eu/eurostat/web/metropolitan-regions/background

[6] http://ec.europa.eu/eurostat/web/cities/spatial-units

2.4 Judging the intensity of the potential effects

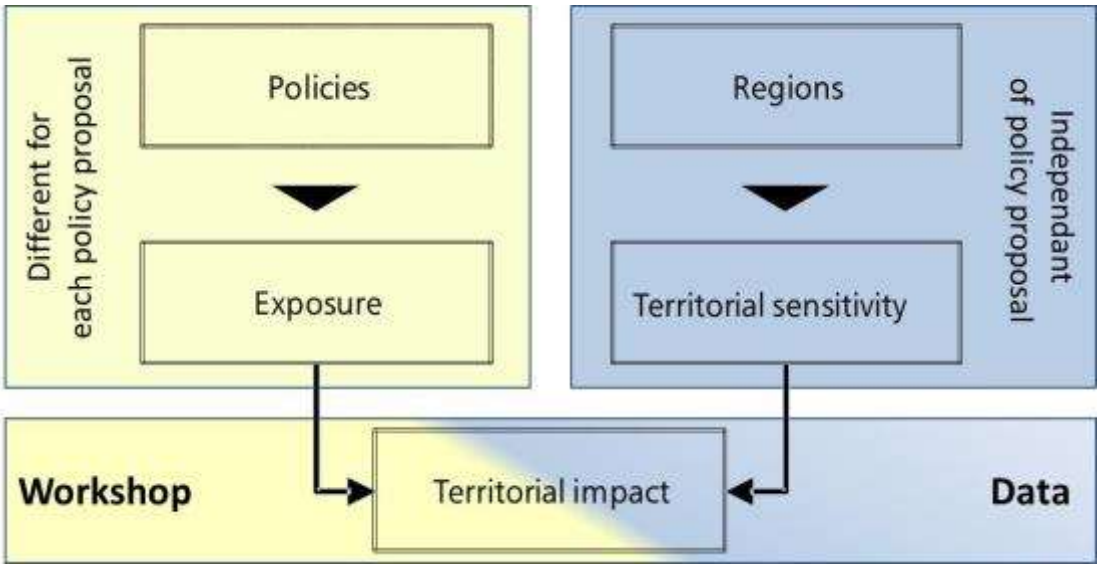
The participants in the workshop were asked to estimate the potential effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning. They judged the potential effect on the territorial welfare using the following scores:

++ strong advantageous effect on territorial welfare (strong increase)
+ weak advantageous effect on territorial welfare (increase)
o no effect/unknown effect/effect cannot be specified
- weak disadvantageous effect on territorial welfare (decrease)
-- strong disadvantageous effect on territorial welfare (strong decrease)

2.5 Calculating the potential "regional impact" – Combining the experts' judgement with the regional sensitivity

The ESPON TIA Quick Check combines the experts' judgement on the potential effect of the EU's implementation of the 2030 Agenda **(exposure)** with indicators depicting the sensitivity of regions, resulting in maps showing a territorially differentiated impact. This approach is based on the **vulnerability concept** developed by the Intergovernmental Panel on Climate Change (IPCC). In this case, the effects deriving from a particular policy measure (exposure) are combined with the characteristics of a region **(territorial sensitivity)** to produce potential territorial impacts (cf. following figure).

Figure 4 - Exposure x territorial sensitivity = territorial impact



Source: ÖIR, 2015.

- "Territorial Sensitivity" describes the baseline situation of the region in terms of its ability to cope with external effects. It is a characteristic of a region that can be described by different indicators independently of the topic analysed.

- "Exposure" describes the intensity of the potential effect on a specific indicator of the EU's implementation of the 2030 Agenda. Exposure illustrates the experts' judgement, i.e. the main findings of the expert discussion at the TIA workshop.

2.6 Mapping the potential territorial impact

The result of the urban impact assessment of the effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning is presented in map form. The maps displayed below show potential territorial impacts based on combining the experts' judgement on regions' exposure with their territorial sensitivity, described by an indicator at NUTS 3 or FUA level. While the expert judgement is qualitative (i.e. strong advantageous effect/weak advantageous effect/no effect/weak disadvantageous effect/strong disadvantageous effect on territorial welfare), the sensitivity is a quantitative indicator (a detailed description is provided in the appendix).

3 Descriptive detail of the experts' debate

3.1 Cohesion policy as a cornerstone of European policies in SDGs

After the initial presentations the experts were asked to give their initial thoughts on how the implementation of the 2030 Agenda affects spatial planning, bearing in mind the four main areas of SDG 11: sustainability, resilience, safety and inclusiveness. Sustainable Development Goal 11 aims to "make cities and human settlements inclusive, safe, resilient and sustainable." SDG 11.3, in particular, aims to "by 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries". Two statistical indicators have been attached to this goal: the ratio of land consumption rate to population growth rate, and the proportion of cities with a direct participation structure of civil society in urban planning and management that operate regularly and democratically.

EU cohesion policy was mentioned as the key European tool for promoting economic, social and territorial cohesion within the European Union, and is one of the most visible EU policies at local and regional level, demonstrating the benefits of Europe to its citizens.

3.2 Land use and densification

Experts started by approaching the topic of **land use**. Land must be seen as a finite natural resource, and consideration given to how to manage it to achieve the best outputs possible. The increase in land use for urban spaces is unsustainable, especially when we realise that these new urban areas are built with no interlinkages and are devoid of multiuse spaces. Furthermore, the redevelopment of land must be better implemented, as the transformation of, for example, industrial land that is no longer needed into habitable space can help to reduce urban sprawl.

These two elements – **connectivity** between spaces and **efficiency** of the use of such spaces – are what make cities attractive. Their absence has especially negative effects in fields such as social integration. This particular type of city growth is accompanied by an absence of social spaces, where the population can meet and a sense of community can be generated. The quality of social spaces need to be addressed and these spaces need to be well located and accessible to the urban poor.

Another field affected by spatial planning is transport. The choices made in this regard will determine patterns of movement within and around cities, as well as the existence and the quality of public transport. This in turn will affect heavily environmental aspects such as air quality.

The experts noted that **densification** is an important element in making better use of land, while opening the door to ensuring better connectivity. Nevertheless, it is a sensitive topic because it might be rejected by the population. In that sense, densification has an important **social content** that requires public participation in its design. Densification needs to be well planned and cannot be seen as a general panacea for dealing with urban growth. Density is one of several major components affecting the ways in which urban areas will influence and be affected by a changing climate. Adopting 'increasing densification' as a strategy without assessing these other factors – including distribution of employment opportunities and the nature of transport systems – is not likely to provide lasting sustainability or resilience benefits.

However, in conjunction with a wider awareness of urban form and process, well-planned, effectively-managed, and densely-settled towns and cities can help to limit greenhouse gas emissions and facilitate resilience to the challenges of climate change.

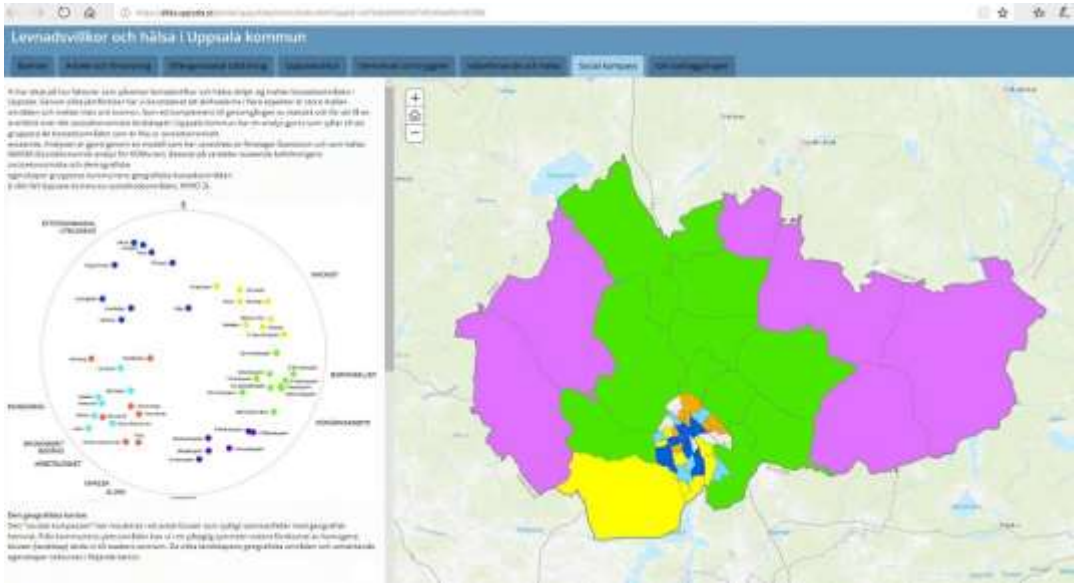
It is also worth noting that some spaces in and around Functional Urban Areas cannot be easily densified, due to the more dispersed nature of settlement. These areas, though they might not be well connected to public transport, bring other important elements to urban areas (relatively easily accessible green areas) that improve quality of life for their residents.

3.3 Social resilience

Participants went on to discuss the resilience of communities in the face of urban change and the requirements of spatial planning, looking at the example of the work done by the municipality of Uppsala. Uppsala has produced a **social compass** tool that produces a complete written report[7] on how the different subareas of the municipality can have very different socioeconomic characteristics. It describes living situations, employment rates, education, living conditions for children, democracy/participation, safety, health and well-being for different areas, providing a solid foundation for ultimately understanding how the different policies will affect different groups of people. In addition, the municipality also has internal software using geographical information systems that can be used as a basis for evaluating the impact. Uppsala and many other municipalities in Sweden have also developed tools for Social Impact Assessment, making it possible to integrate the social aspects of environmental impact into an environmental impact assessment (see image below).

[7] Available online, in Swedish, at https://www.uppsala.se/contentassets/4ffeef74a7d74fcdbb17c199a94f7406/bilaga-7-skillnader-halsa-levnad_interaktiv.pdf.

Map 1 - Social Compass of the city of Uppsala



The experts also criticized the social impact of environmental impact assessments in their excessively procedural approach. For some of the experts, there is too much focus on the environment, which is pushing out other dimensions that also need to be looked at, such as social cohesion, economic outputs and cultural traditions.

3.4 The political nature of spatial planning

This leads to the question of citizenship and **political participation**. The growth of cities with limited spaces for social interaction may limit the capacity to generate civic engagement in decision-making and exclude newcomers from community life.

Participants underlined the fundamentally political nature of spatial planning. Urban planning tends to be a medium- to long-term project, lasting at least five years. This means that it is also inflexible. The time-gap between planning and implementation makes it difficult to change and adapt, resulting in losses of economic opportunities for cities, which do not have the means to respond to the more dynamic demands of the private sector.

Shifting from this assessment to potential solutions, participants discussed how to improve this situation through public incentives. It was noted that there was unfortunately a big **clash between policy goals at legislative level**. In particular, experts noted that state aid rules[8] heavily restricted capacity for investment.

[8] Council Regulation (EU) 2015/1589 of 13 July 2015 laying down detailed rules for the application of Article 108 of the Treaty on the Functioning of the European Union.

https://eur-lex.europa.eu/legal-content/en/TXT/?uri=CELEX:32015R1589

This clash is further noticeable in a country-to-country comparison. While in some European countries, environmental impact assessments are quick and precise, in others they are weaker, with no survey on the ground, and are essentially literature-based. This is not due to a lack of rules, and experts tended to agree that the problem might lie elsewhere – specifically, the capacity of public authorities to apply the legislation and perform and monitor existing impact assessments influences the quality of spatial planning.

Alongside that, though, the experts wondered whether the laws were not **too prescriptive**. Indeed, a very detailed law may be an obstacle to the fulfilment of SDGs. An alternative approach is to re-focus on the interplay of money and power. More concretely, some participants raised the question of **conditionalities**[9]. Linking public resources (including European funds) to the accomplishment of specific goals could serve as an incentive for local, regional and national authorities to align on best practices and even, where necessary, engage in EU-level capacity-building initiatives that would allow regions that are lagging behind to adapt the policies of front-runners to their own context.

3.5 Growth and Technology

Following this reflection, experts considered the impact of policies, investments and technological changes versus their measurable size (for example in financial terms). Specifically, it was noted that legislation and public investment could have smaller effects on cities than technological change. In particular, the emergence of the sharing economy has changed both the housing and transport markets in many cities[10].

Similarly, other technological shifts can influence what is perceived as public space (such as the influence of social media in political participation) or potentially reduce dependence on private transportation (such as e-commerce, and the associated logistics uses). In that sense, spatial planning is limited not only by political goals and legislative implementation of policies, but also by phenomena that are frequently out of reach of decision-makers. The lack of connection between the policy level and social evolution was also pointed out in the mismatch

[9] Regulation (EU) No 1303/2013 of the European Parliament and of the Council of 17 December 2013 laying down common provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund, the European Agricultural Fund for Rural Development and the European Maritime and Fisheries Fund and laying down general provisions on the European Regional Development Fund, the European Social Fund, the Cohesion Fund and the European Maritime and Fisheries Fund.
http://eur-lex.europa.eu/eli/reg/2013/1303/oj

[10] An example is offered by the study by David Wachsmuth and Alexander Weisler (2018) from the School of Urban Planning, McGill University: "Airbnb and the Rent Gap: Gentrification Through the Sharing Economy", in *Environment and Planning A: Economy and Space* (forthcoming).
https://www.researchgate.net/profile/David_Wachsmuth/publication/318281320_Airbnb_and_the_Rent_Gap_Gentrification_Through_the_Sharing_Economy/links/5ae724db0f7e9b9793c82d47/Airbnb-and-the-Rent-Gap-Gentrification-Through-the-Sharing-Economy.pdf?origin=publication_detail.

that may be found between administrative/planning units and the effective evolution of urban areas and their hinterland.

3.6 Recognising the asymmetries within each country and across Europe

The discussion then shifted to the **plurality** of cases across the European Union concerning **awareness of the Sustainable Development Goals and their implementation** through proper integration with their spatial planning. It was pointed out that we should not let ourselves be trapped by dichotomic paradigms of the type North/South or East/West. Political culture, social traditions and economic outlook do affect how each country develops its spatial planning, but such generalisations blur the picture and do not allow us to see how different neighbouring countries often are. Sweden and Finland were given as an example of such differences, with Sweden following a more decentralised model.

Even within individual countries, specific conditions may determine very different approaches and solutions. For example, in Greater London the Metropolitan Green Belt limits the outward growth of the urban area. The principles of Green Belt policy are set out in the *National Planning Policy Framework*[11], paragraph 79 of which states that "the fundamental aim of Green Belt policy is to prevent urban sprawl by keeping land permanently open; the essential characteristics of Green Belts are their openness and their permanence". But in some other parts of the United Kingdom the absence of such limits results in an increase in development around urban areas.

Bearing in mind such differences, the experts were in favour of country-specific recommendations on the implementation of SDGs that integrated both the European global vision and national and regional specificities. The issue of **subsidiarity** was highlighted as an important element not to be forgotten. Though we can and should think strategically at a continental level, Member States might not be willing to hand over such power. Furthermore, the position of local and regional authorities might be weakened if too much decision-making power was given to Union level.

3.7 Custom-made policies

Echoing the previous points made throughout the workshop it was concluded that we cannot and should not use a one-size-fits-all approach at European level. Legislation itself produces different effects in each country and region, due to endogenous problems. Nevertheless, the production of more statistical data, and its standardisation, could allow for cross-region

11 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf

comparisons. This in turn could re-focus decision-makers and spatial planners on pursuing identifiable goals and obtaining practical results, instead of merely following rules.

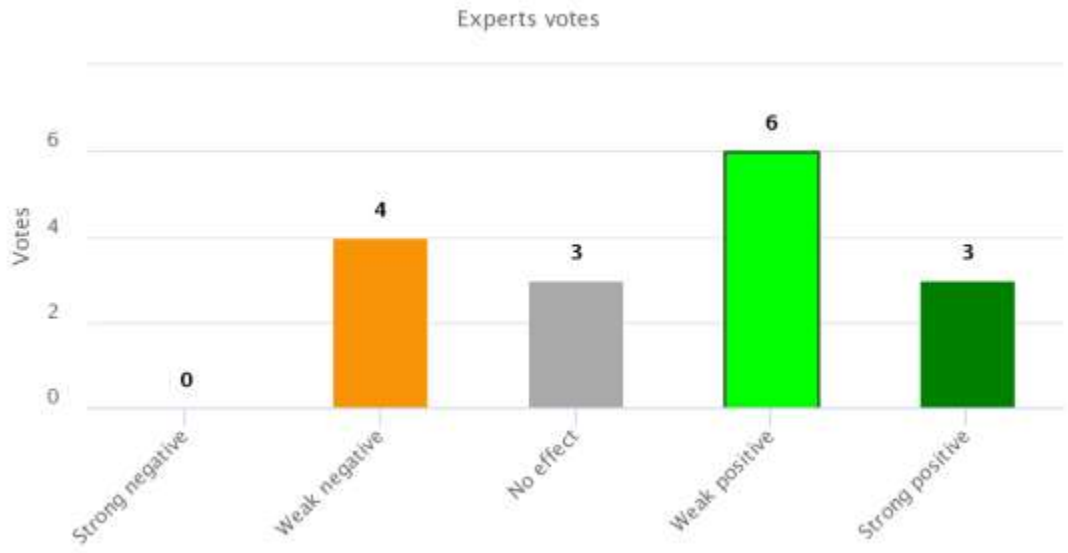
Although a one-size-fits-all approach at European level is not favoured in general, some experts suggested that EU investments should be categorised based on their size and that **large-scale investments** should be planned at EU level and co-funded by the EU. The experts based this opinion on the fact that competing economies, such as China, are trying to invest heavily in European transport networks, which would eventually give those competing economies a competitive advantage. These experts emphasised port and harbour investment. **the territorial agenda** is actually in line with this view, but there might be a need for incentives to **accelerate the implementation**. The ministers responsible for spatial planning and territorial development confirmed this need, stating that they believed that the effective implementation of the TA2020 required a framework for **concrete actions** and expected **tangible results**.

4 Results of the TIA quick check: Potential territorial impact considering resilience aspects

4.1 The potential territorial impact on annual land take per inhabitant

Looking at the indicator "ratio of land consumption rate to population growth rate" proposed by the UN for measuring the impact of SDG 11.3, the experts felt that SEAs based on SDG 11.3 would lead to spatial plans that aimed to slow down land consumption and urban sprawl. Thus, the majority of experts expected a positive effect: Three judged the effect to be strongly positive and six weakly positive. Four experts expected a weakly negative impact on the annual land take per inhabitant.

Figure 5 - Workshop findings: Expert judgement: Effect on annual land take per inhabitant of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



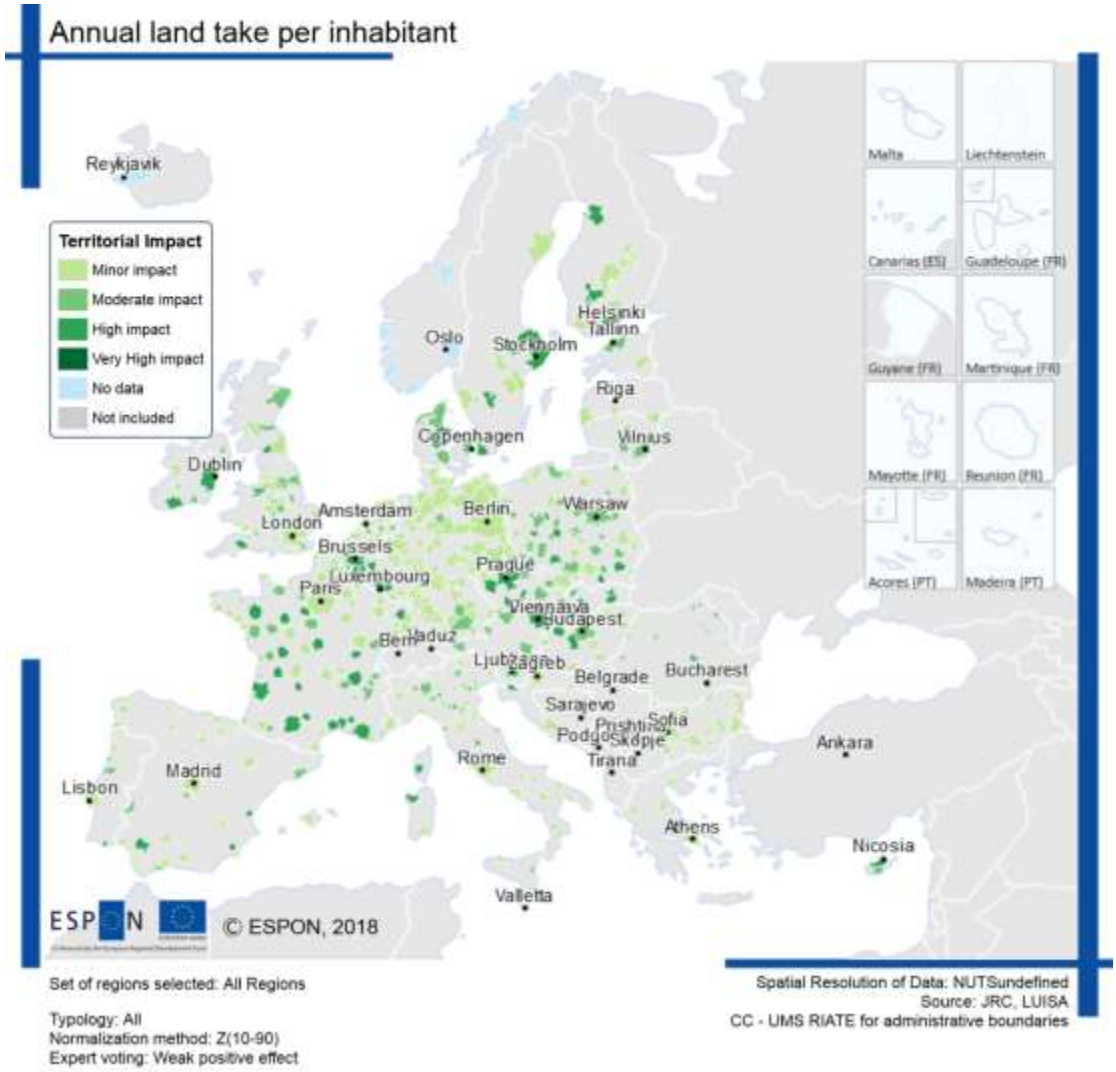
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region shows the annual land take per inhabitant from 2010 to 2030. It measures how much land that was initially covered by agriculture, forests and semi-natural areas is converted into housing, commercial, industrial and service areas over time. This indicator first takes the annual average of total land take, and then divides it by the previous year's population in order to find the annual land take per inhabitant in square metres.

Regions with a higher level of land take per inhabitant are expected to be more sensitive to the effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning, as they are using land less efficiently. Sensitivity is thus directly proportional to the annual land take per inhabitant.

The following map shows the potential territorial impact of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning, based on the annual land take per inhabitant in a FUA. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions.

Map 2 - Result of the expert judgement: Annual land take per inhabitant affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

14% of the FUAs would experience a very highly positive impact and 18% a moderately positive impact, as in these regions the current annual land take per capita is fairly high. These regions are located in the metropolitan areas of Sweden, Finland, Belgium, Hungary and Ireland. Most of the FUAs in Austria, Poland and the southern and western FUAS of France would also experience a highly positive impact.

69% would see only a minor positive impact, as in those regions the annual land take per capita is already low. These regions are located e.g. in Germany, Belgium, northern France, Bulgaria, southern Italy and central Spain.

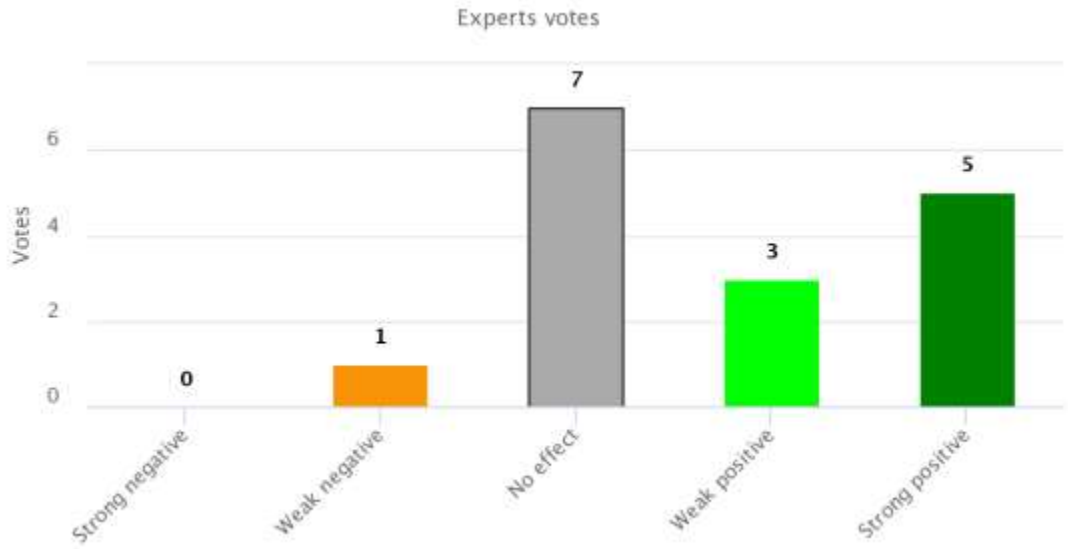
Looking at the distribution patterns, two hypotheses for a low annual land take could be developed. Firstly, it could be suggested that, in regions with a less dynamic economy, the annual land take is lower due to less demand for new building land and consequently an improved SEA focusing more closely on SDG 11.3 would have less impact. This could for example apply to some urban regions in the eastern and southern parts of Europe and to urban regions in the far north (e.g. in Scandinavia or the UK) and the "inner peripheries".

Another hypothesis could be that those regions where the Member States have established efficient spatial planning instruments have less land take per inhabitant and are already quite successful in reducing land consumption (e.g. Germany, the Netherlands). However, this hypothesis is not necessarily valid, especially looking at the scenario in Austria: Austrian planning instruments are well developed on a local and regional scale but land consumption is relatively high and therefore it is not possible to detect a correlation.

4.2 The potential territorial impact on built-up areas per inhabitant

While the indicator of annual land take per inhabitant is a dynamic indicator measuring the development of land consumption over time, the indicator of built-up areas per inhabitant is static, depicting the existing situation of land consumption per inhabitant. The majority – seven – of the experts did not consider this indicator to be relevant. Five experts voted for a strongly positive effect and three for weakly positive. One expert judged it as weakly negative.

Figure 6 - Workshop findings: Expert judgement: Effect on built-up areas per inhabitant of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



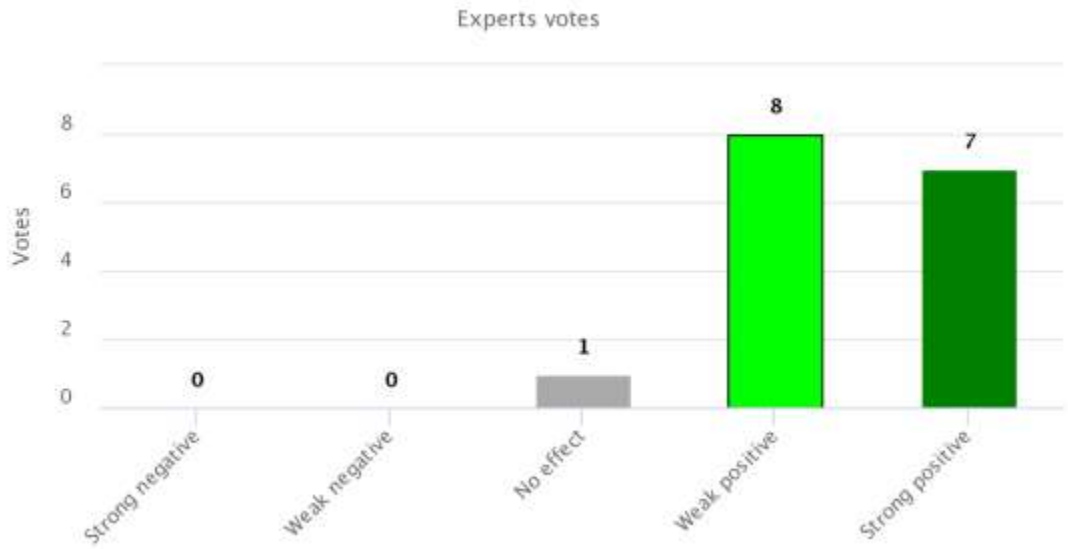
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

As the majority of experts judged this indicator not to be relevant and as the indicator of annual land take per inhabitant is a perfect indicator measuring land consumption, this indicator was not taken on board for further analysis.

4.3 The potential territorial impact on green infrastructure per capita

As reduced land consumption for built-up land opens more space for green infrastructure, the experts concluded that the SEA Directive in the light of SDG 11.3 could have a positive effect on green infrastructure. Seven experts voted for a strongly positive effect and eight for weakly positive. One expert did not see a relevant effect.

Figure 7 - Workshop findings: Expert judgement: Effect on green infrastructure per capita of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



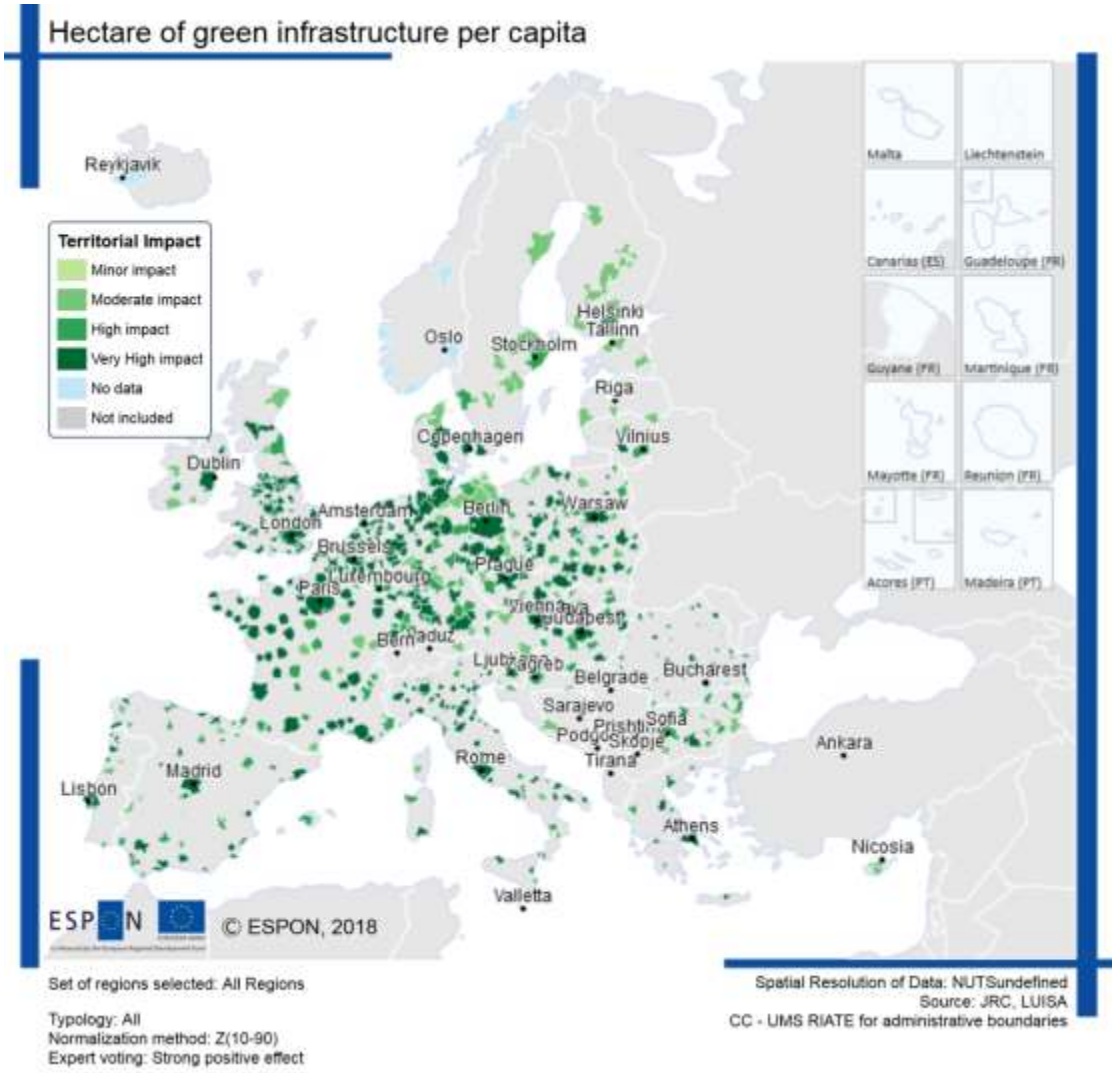
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to the amount of green infrastructure per capita is calculated by reclassifying the LUISA land use map, and is provided in hectare per capita. Green infrastructure includes natural and semi-natural areas, features and green spaces in rural and urban, terrestrial, freshwater, coastal and marine areas.

Regions with more green infrastructure per capita may be less exposed to environmental impacts in certain fields, e.g. heat islands, flooding, etc. Sensitivity is thus inversely proportional to the share of green infrastructure.

The following map shows the potential territorial impact of effects of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning, based on the amount of green infrastructure per capita in FUAs.

Map 3 - Result of the expert judgement: Hectare of green infrastructure per capita affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: strong positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

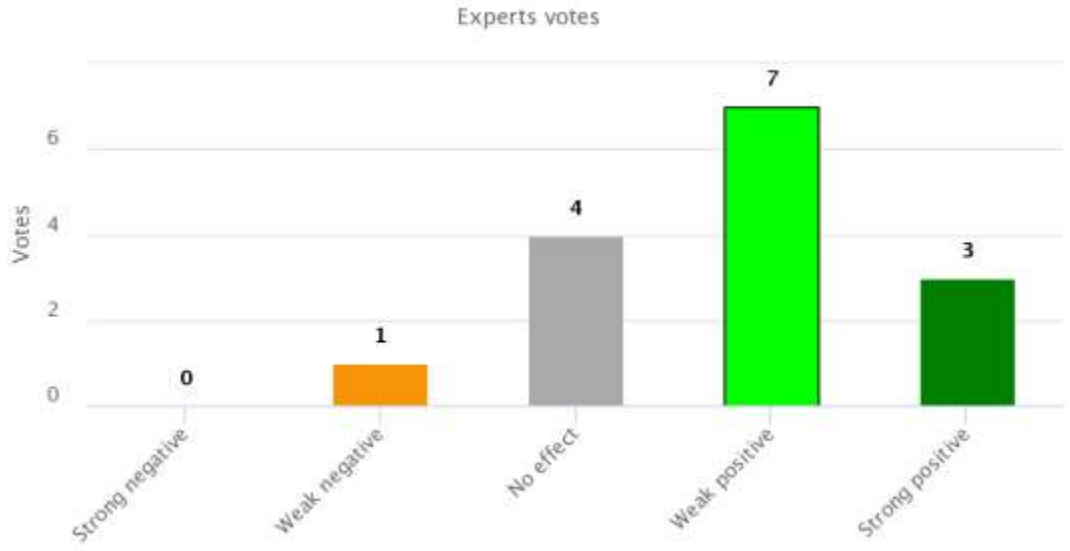
The first map combines the expert judgement of a strong positive effect with the given sensitivity of metropolitan regions. Most of the FUAs could gain either a very highly positive (70%) or a highly positive (17%) impact. 13% of the FUAs would see a moderate positive impact.

The regions with a less positive impact from a spatial planning system focusing more closely on SDG 11.3 are those with a high level of green infrastructure per capita. They are located e.g. in Scandinavia, the Baltic countries, Bulgaria, north-east Germany, central France and Austria.

4.4 The potential territorial impact on economic growth

Urban development in the light of SDG 11.3 would also affect the economic development of cities. Three experts judged the effect on economic growth (GVA/capita) to be strongly positive and seven weakly positive. One expert judged it to be weakly negative.

Figure 8 - Workshop findings: Expert judgement: Effect on economic growth (GVA/capita) of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



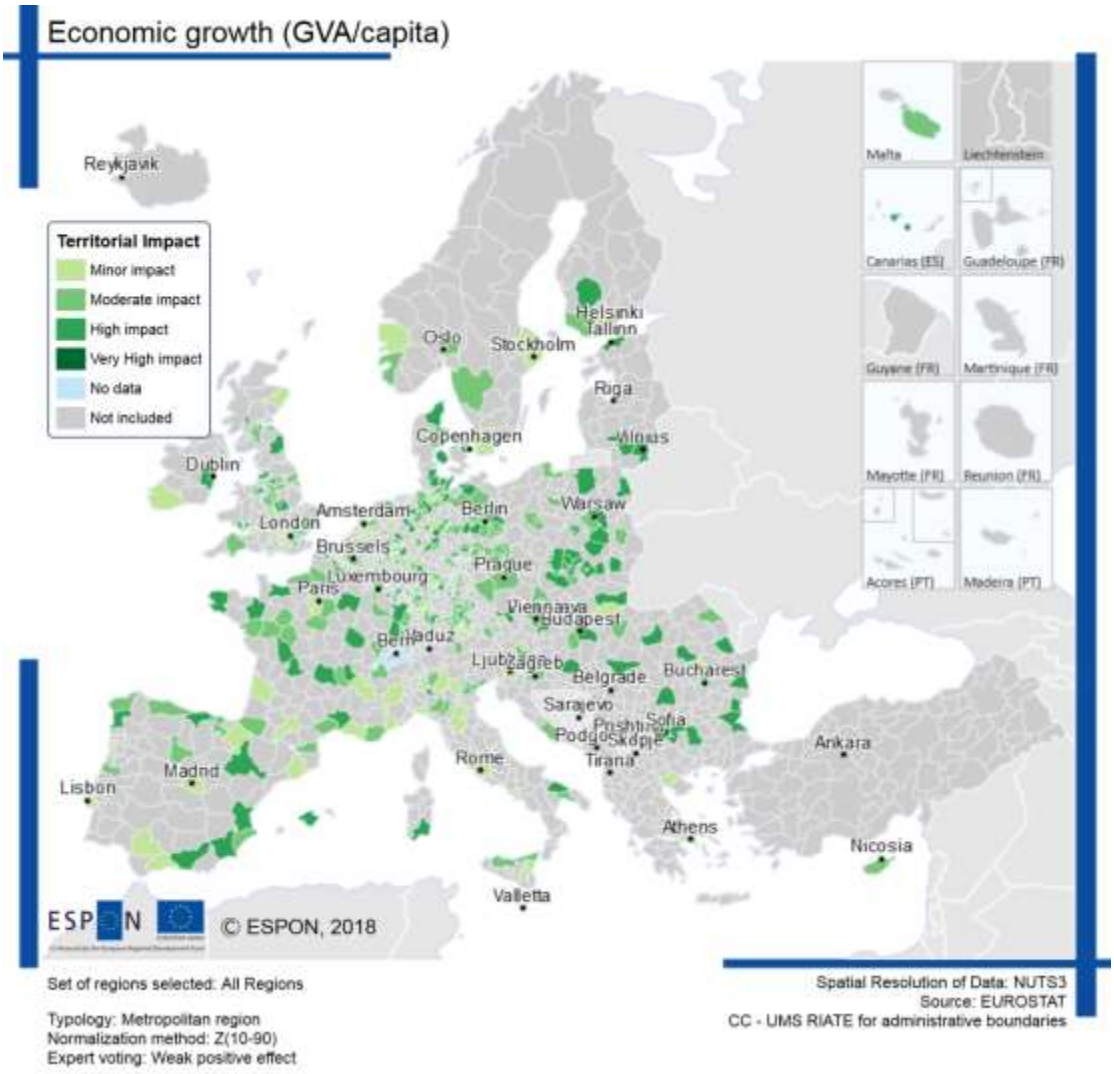
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to economic growth is measured by the gross value added per inhabitant in euro. Regions with lower GVA per capita are expected to benefit more from the effect of policies targeting the economic development of regions, due to a suggested catch-up effect. Sensitivity is thus inversely proportional to the level of GVA per capita.

The following map shows the potential territorial impact of the SEA Directive on urban development through spatial planning in the field of economic growth (GVA/capita) in NUTS 3 metropolitan regions. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions.

In general terms, there is a certain consensus that sustainable cities come from a structured and flexible urban form that allows for an economy of real estate resources, recycling of uses of space, paying attention to efficient use of energy, water and materials, noise restriction, classification of public spaces and the integration of spatial planning and transport policy.

Map 4: Result of the expert judgement: Economic growth affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

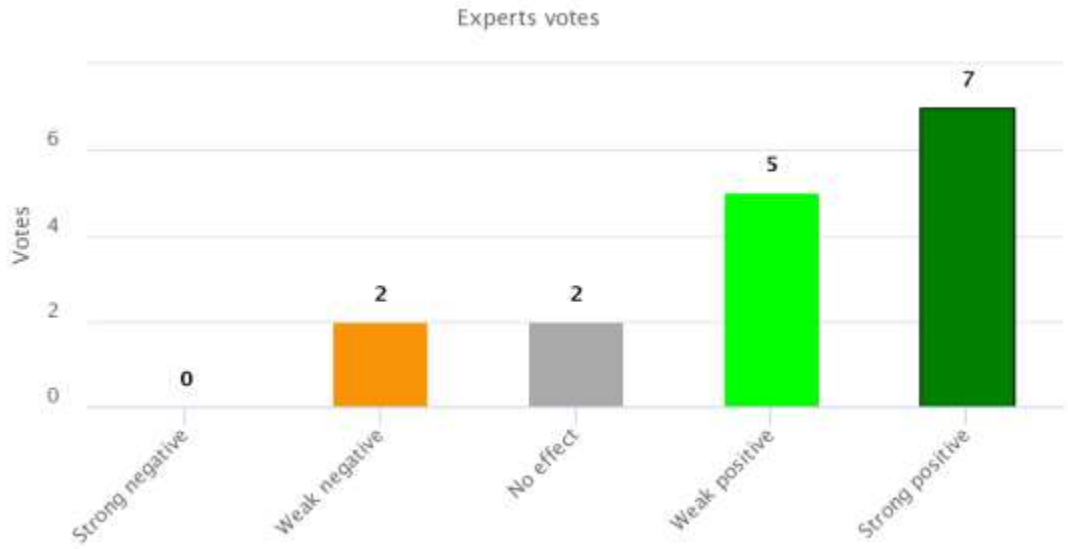
The map shows that 33% of the metropolitan regions would expect a highly positive impact, 45% a moderately positive impact and 22% a minor positive impact. Many of the metropolitan regions with the highest positive effects are located in the eastern and southern Europe, in areas that are less economically advanced, such as in Romania, Bulgaria, eastern Poland, the Baltic states, the southern Mediterranean coast of Spain and Sardinia. These regions are expected to see a catch-up effect.

5 Results of the TIA quick check: Potential territorial impact considering inclusiveness aspects

5.1 The potential territorial impact on the quality and accountability of government services

As SDG 11.3 aims at improving structured participation of civil society in urban planning processes, a consequent improvement of spatial planning systems towards higher participation rates triggered by the SEA Directive could lead to better planning processes and contribute to increasing the quality of governance systems in urban planning. Seven experts judged this effect to be strongly positive and five judged it to weakly positive. Four experts did not consider this indicator relevant, while two experts judged the effect to be weakly negative.

Figure 9 - Workshop findings: Expert judgement: Effect on the quality and accountability of government services of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning

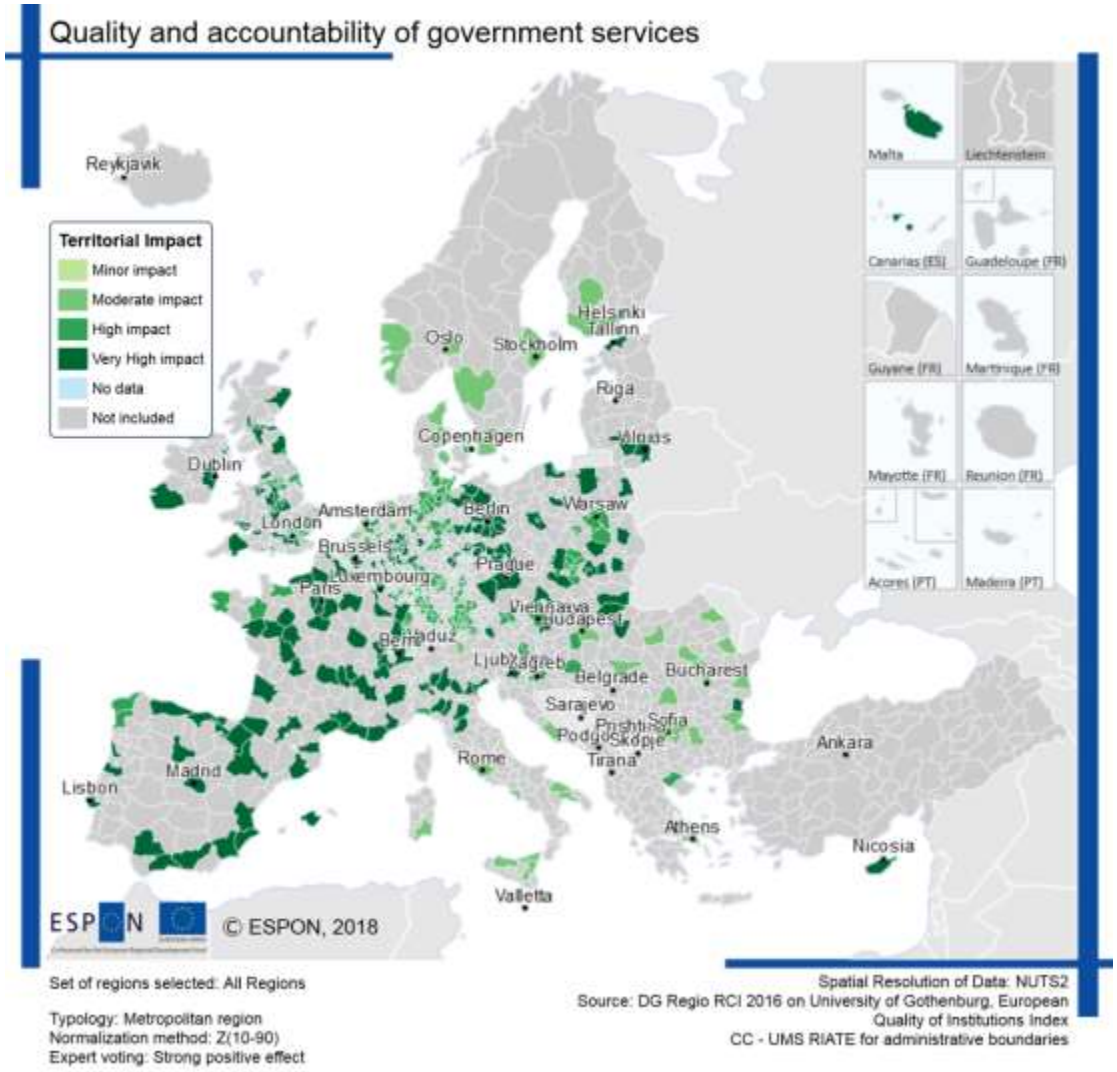


Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator "quality and accountability of government services" is computed on the basis of the University of Gothenburg's Quality of Government Institute (QoG) Quality sub-index and the national Worldwide Governance Indicators. Regions showing lower quality and accountability of government services might benefit more from the application of the SEA Directive in the light of SDG 11.3. Sensitivity is thus inversely proportional to this indicator.

The following map shows the potential territorial impact of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning based on the quality and accountability of government services in NUTS 3 metropolitan regions.

Map 5 - Result of the expert judgement: Quality and accountability of government services affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: strong positive effect



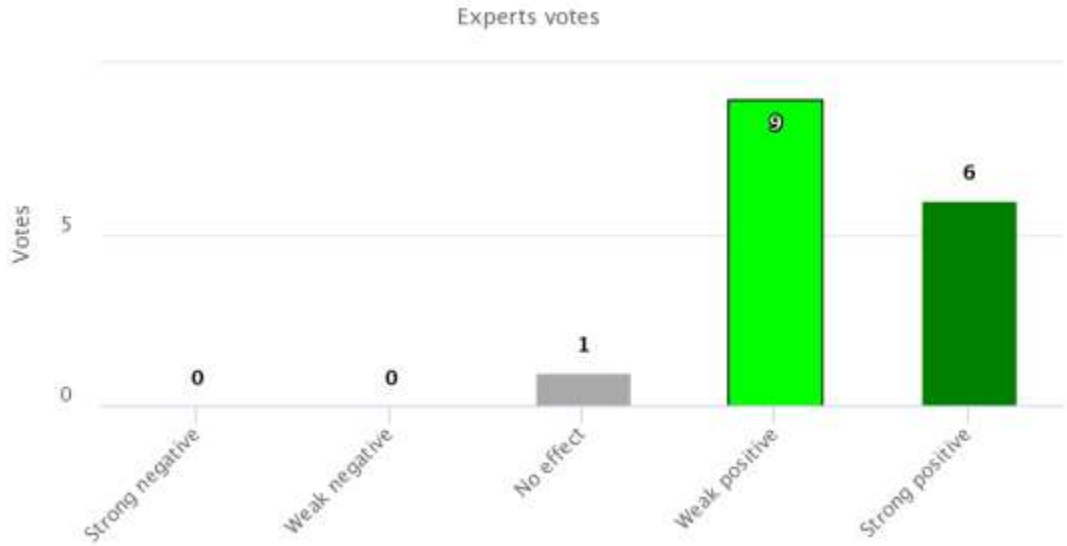
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The map above combines the expert judgement of a strong positive effect with the given sensitivity of regions in terms of the quality and accountability of government services. Almost half of the regions could gain a very highly positive impact, and an additional 40% a highly positive impact. Metropolitan regions expecting a moderately positive impact represent 11% of all regions. The metropolitan regions with the highest impacts are located e.g. in eastern Germany, in the eastern parts of Poland, in the Baltic states, in the northern part of Italy, in Spain and in the southern part of France.

5.2 The potential territorial impact on recreational areas

The experts discussed the idea that spatial plans focusing more strongly on SDG 11.3 could result not only in less land consumption but also with more recreational areas available to city-dwellers, improving their quality of life. Six experts judged the effect on recreational areas to be strongly positive, and nine experts weakly positive. One expert did not consider it relevant.

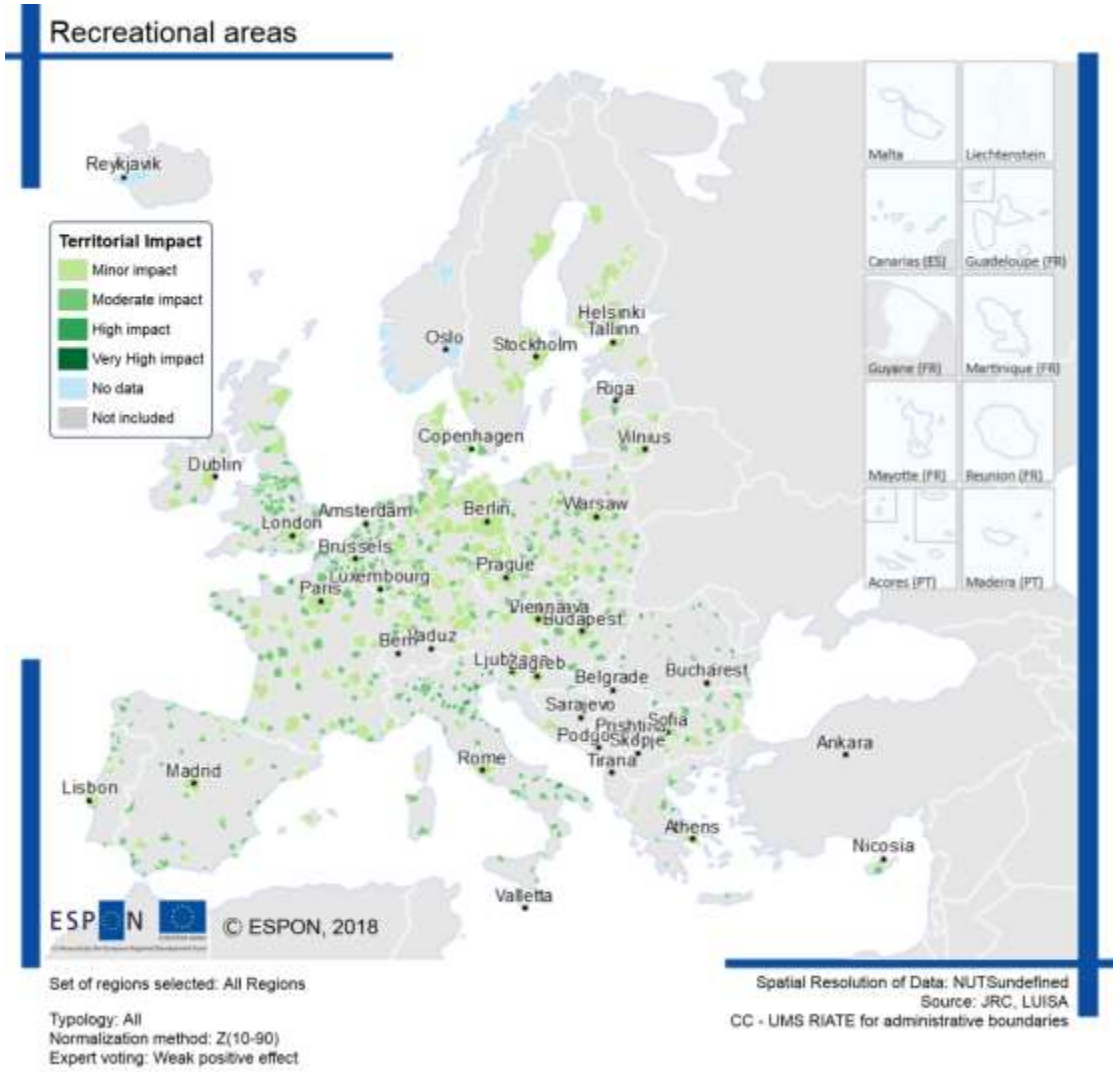
Figure 10 - Workshop findings: Expert judgement: Effect on recreational areas of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to nature-based recreational areas estimates the capacity of urban ecosystems to provide recreational opportunities. Regions showing higher recreational opportunities are expected to be more sensitive, as the application of the SEA Directive in the light of SDG 11.3 influencing spatial plans could have a positive impact on the provision of recreational areas. Sensitivity is thus inversely proportional to nature-based recreational areas.

Map 6 - Result of the expert judgement: Recreational areas affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



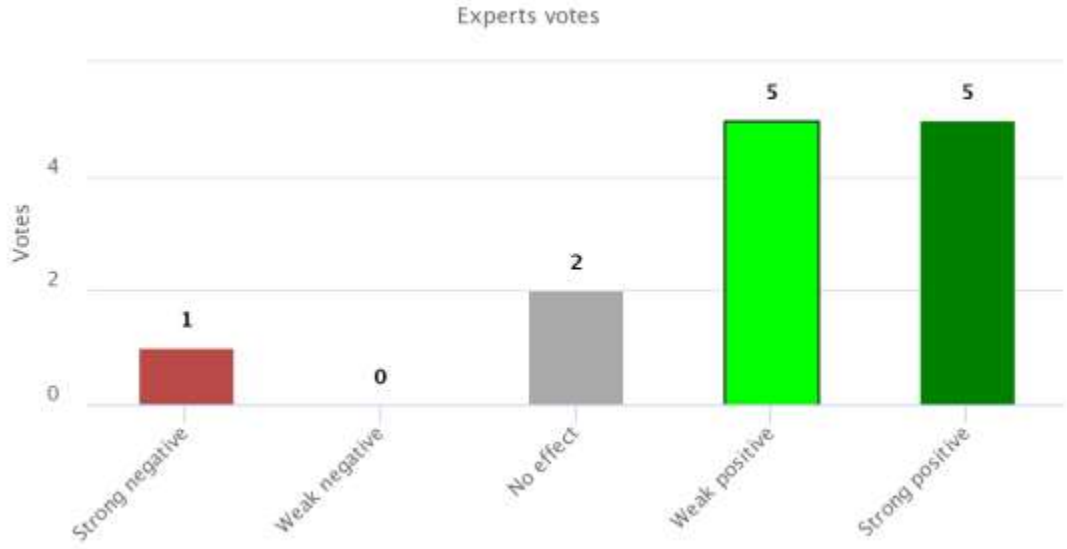
Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The above map shows the potential territorial impact of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning based on the availability of recreational areas in regions defined as FUAs. These areas must be accessible by public transport in order to produce the positive effect on urban development. It combines the expert judgement of a weak positive effect with the given sensitivity of FUAs. 34% of the regions could gain a high positive impact. These regions can in particular be found in Poland, Romania, Italy, the UK, the Netherlands, Belgium and Spain. Many metropolitan regions would only see a moderately positive (41%) or minor positive (25%) impact.

5.3 The potential territorial impact on people at risk of poverty or social exclusion

The experts assumed that an SEA Directive in the light of SDG 11.3 influencing spatial planning might affect societal wellbeing and consequently the risk of poverty or social exclusion. The majority of the participants judged this effect to positive. Five experts voted for strongly positive and five for weakly positive.

Figure 11 - Workshop findings: Expert judgement: Effect on people at risk of poverty or social exclusion of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

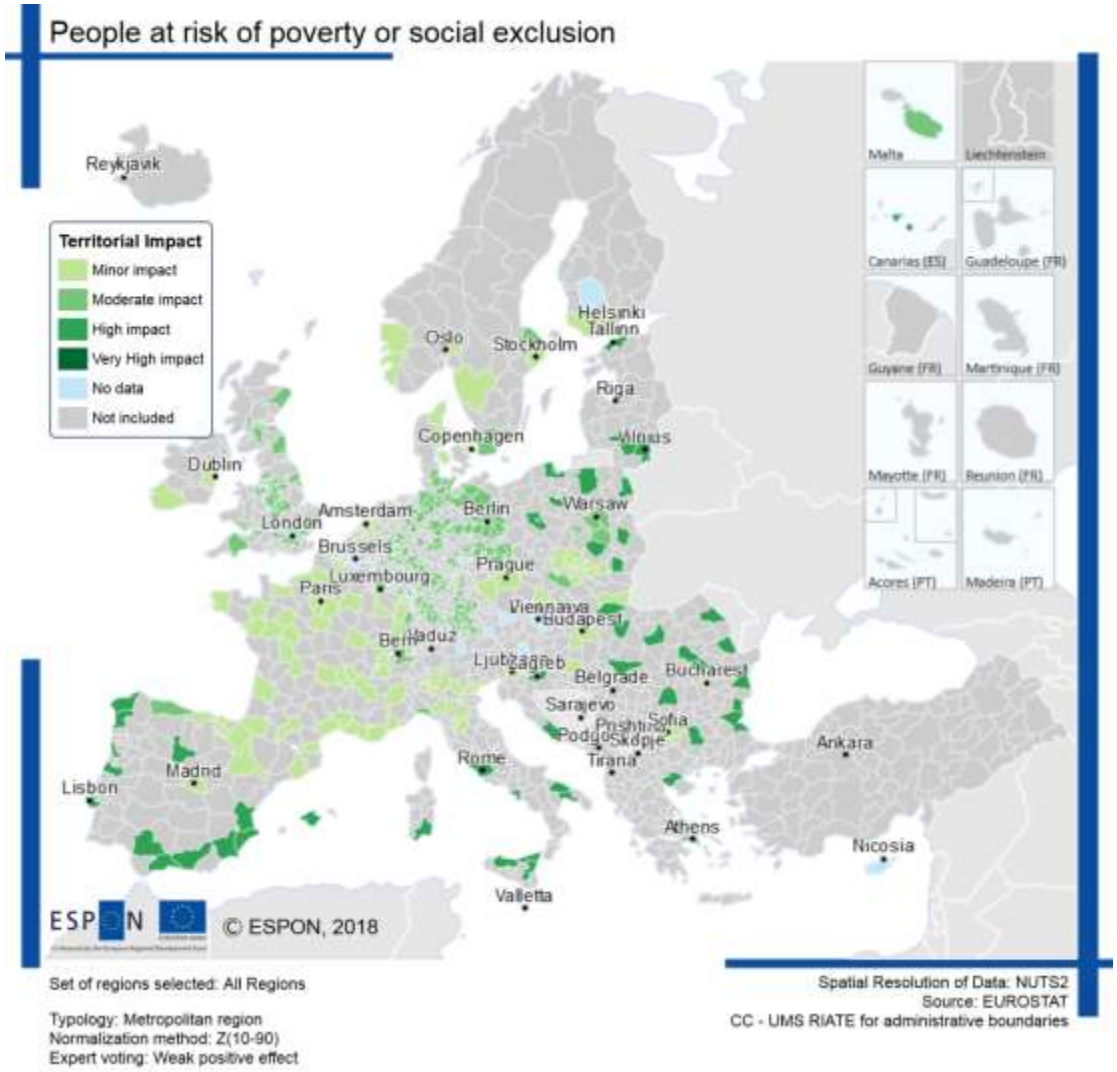
The indicator depicting the sensitivity of a region in terms of people at risk of poverty or social exclusion refers to the situation of people who are either at risk of poverty, severely materially deprived, or living in a household with a very low work intensity.

Regions with a higher at-risk-of-poverty rate are likely to experience more acute poverty. Sensitivity therefore is directly proportional to the at-risk-of-poverty rate.

The following map shows the potential territorial impact of the implementation of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning based on people at risk of poverty or social exclusion in NUTS 3 metropolitan regions, according to the experts' judgements.

The metropolitan regions that are expected to see the highest positive impacts are in eastern Europe, e.g. in Latvia, Poland, Romania, Bulgaria and eastern Germany, and in the South, e.g. on the Mediterranean coast of Spain and Italy, Greece and the Atlantic coast of Spain.

Map 7- Result of the expert judgement: People at risk of poverty or social exclusion affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

This map shows the potential impact based on the expert judgement of a weakly advantageous effect. 11% of the metropolitan regions are expected to see a highly positive impact, 64% a moderately positive and 25% a minor positive impact.

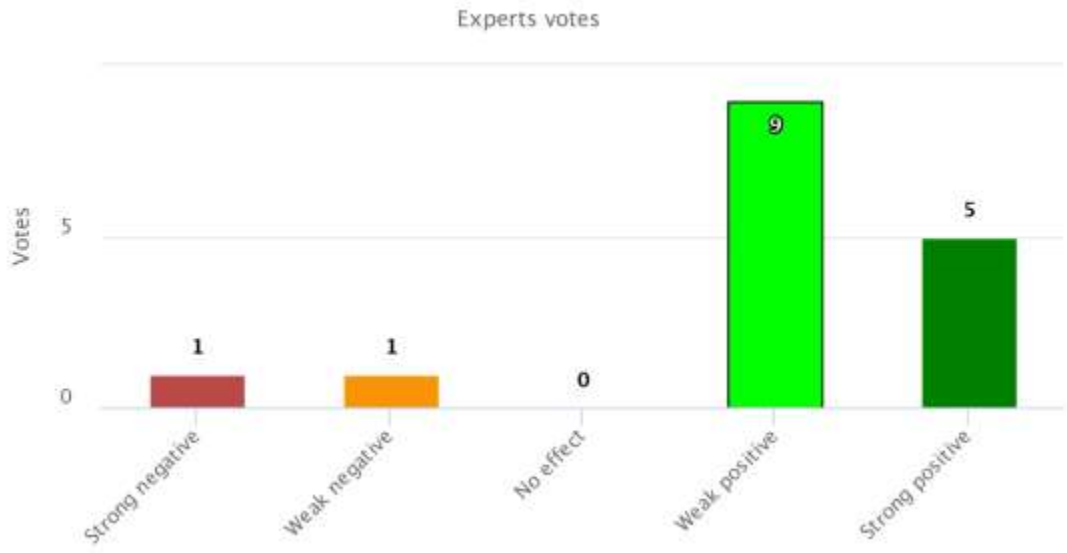
6 Results of the TIA quick check: Potential territorial impact considering sustainability aspects

6.1 The potential territorial impact on the concentration of NO_2

Higher urban densities and reduced urban sprawl will reduce the traffic volume in urban regions. Additionally, it makes it possible to provide a more attractive public transport system in an economical way. This could lead to a reduction in traffic and a shift of transport modes from cars to public transport. This shift would improve air quality by reducing air pollution caused by transport.

The experts considered the concentration of NO_2 to be a relevant indicator in measuring the effects on air quality of the application of the SEA Directive in the light of SDG 11.3 on urban development. Five experts judged the effect to be strongly positive, and nine experts weakly positive. One expert voted for weakly negative, and one for strongly negative.

Figure 12 - Workshop findings: Expert judgement: Effect on the concentration of NO_2 of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning

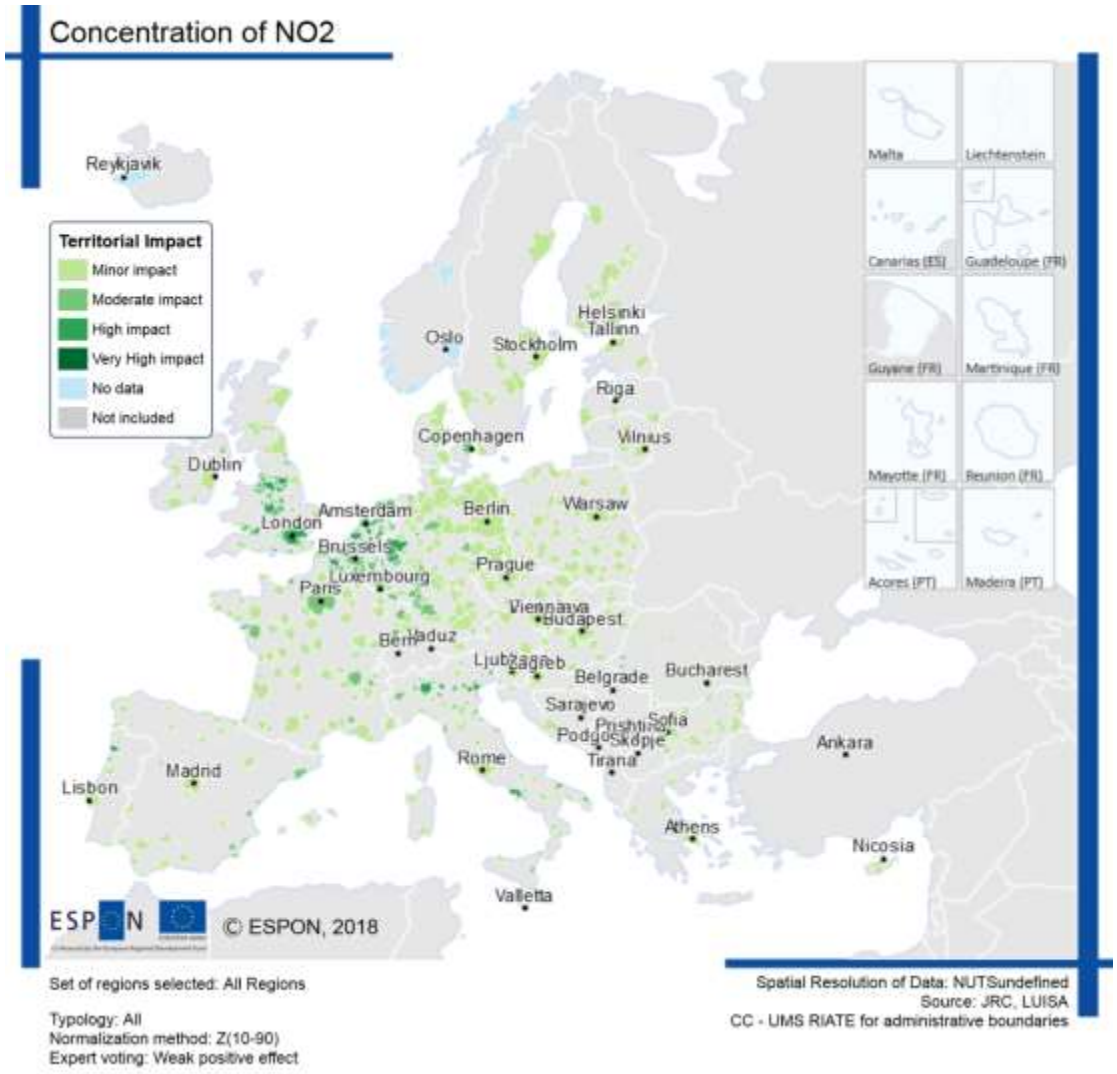


Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to the annual mean concentrations of NO_2 is calculated using Land Use Regression (LUR) Models. The LUR model was built using annual mean NO_2 concentrations for 2010 from the monitoring sites included in the AirBase database (dependent variable) and several parameters (independent variables) defined within a geographic information system.

Regions showing greater concentrations of NO_2 are expected to benefit more from an SEA Directive in the light of SDG 11.3 influencing spatial plans reducing air pollution. Sensitivity is thus directly proportional to the concentration of NO_2.

Map 8: Result of the expert judgement: Concentration of NO_2 affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The above map shows the potential territorial impact of implementing the SEA Directive in the light of SDG 11.3 on urban development through spatial planning based on the concentration of NO_2 in FUAs. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions. 13% of the urban regions are expected to see a highly positive impact and 22% a moderately positive impact. Most of the regions (65%) would experience a minor positive impact.

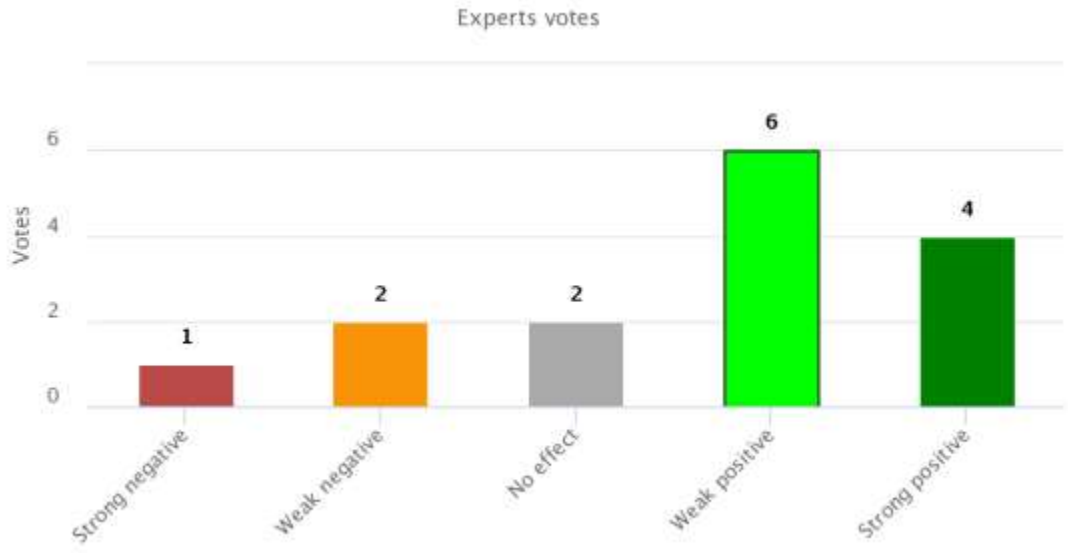
In particular urban regions with high traffic density would gain positive impacts. They are located e.g. in the European core (England, Belgium, northern Germany, Paris), along coasts (Mediterranean coast of Spain, Atlantic coast of northern Portugal) and in economically vibrant industrial areas (e.g. the Ruhr area in Germany or northern Italy).

Future patterns of greenhouse gas emissions and consequent climate change will be driven substantially by the activities taking place in urban areas; similarly, the ways in which climate change impacts the lives and livelihoods of more than half the world's population will also be mediated through actions that are taken – or not taken – in towns and cities.

6.2 The potential territorial impact on the concentration of PM10

Another indicator measuring air pollutants that the experts concluded was relevant is the concentration of PM10. Four experts voted for a strongly positive effect, and six for a weakly positive effect. Two experts did not consider this indicator to be relevant, two judged the effect weakly negative and one strongly negative.

Figure 13 - Workshop findings: Expert judgement: Effect on PM10 concentration of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning

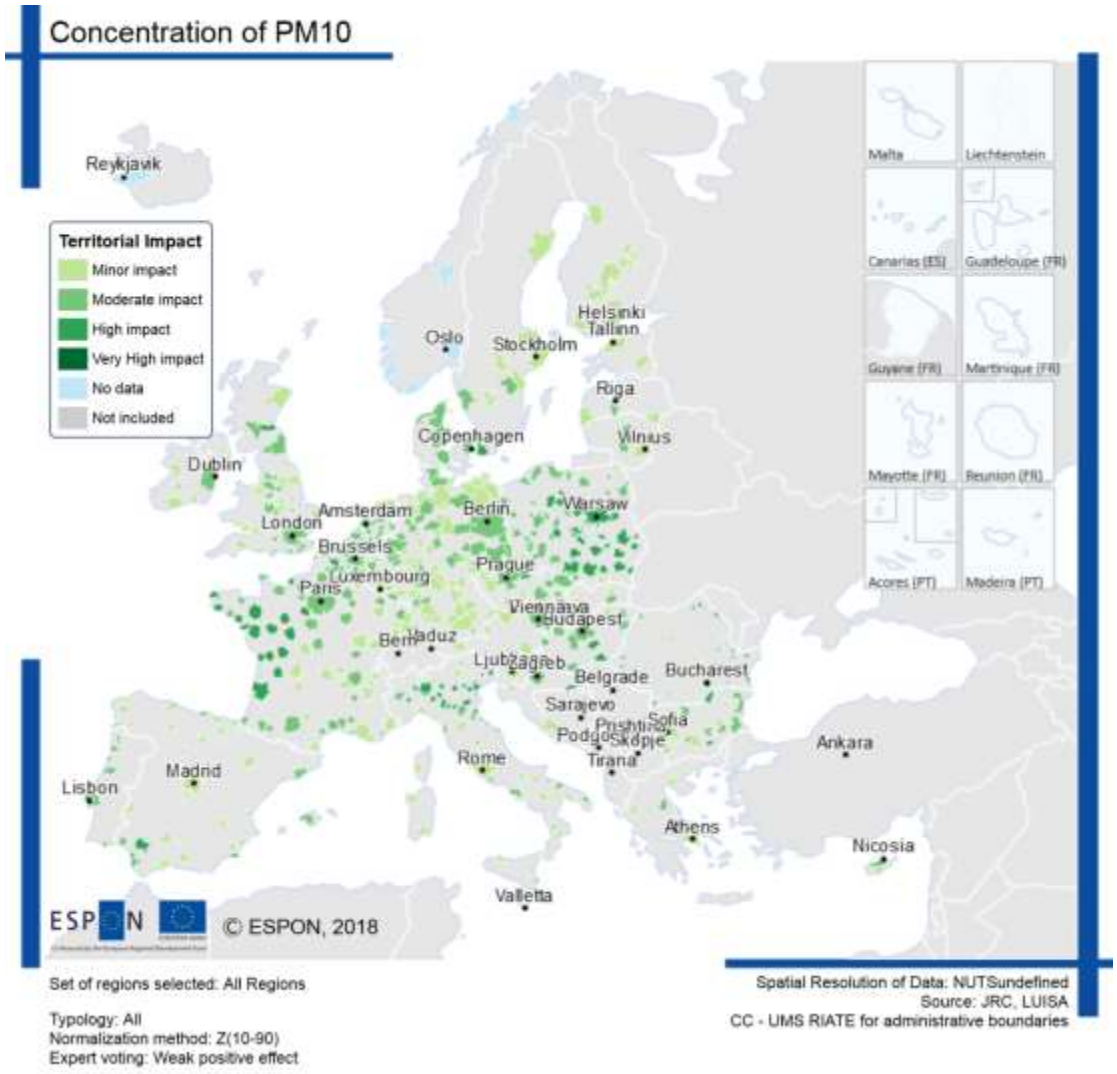


Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to the annual mean concentrations of PM10 is calculated using Land Use Regression (LUR) Models. The LUR model was built using annual mean PM10 concentrations for 2010 from the monitoring sites included in the AirBase database (dependent variable) and several parameters (independent variables) defined within a geographic information system. PM10 measures a combination of sources of air pollutants such as diesel engines (used in lorries and some cars) and domestic fuel (coal, oil).

Regions showing greater concentrations of PM10 are expected to benefit more from a policy aiming at reducing air pollution. Sensitivity is thus directly proportional to the concentration of PM10.

Map 9: Result of the expert judgement: Concentration of PM10 affected by the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning – expert judgement: weak positive effect



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The above map shows the potential territorial impact of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning, based on the concentration of PM10 in FUAs. It combines the expert judgement of a weakly positive effect with the given sensitivity of regions.

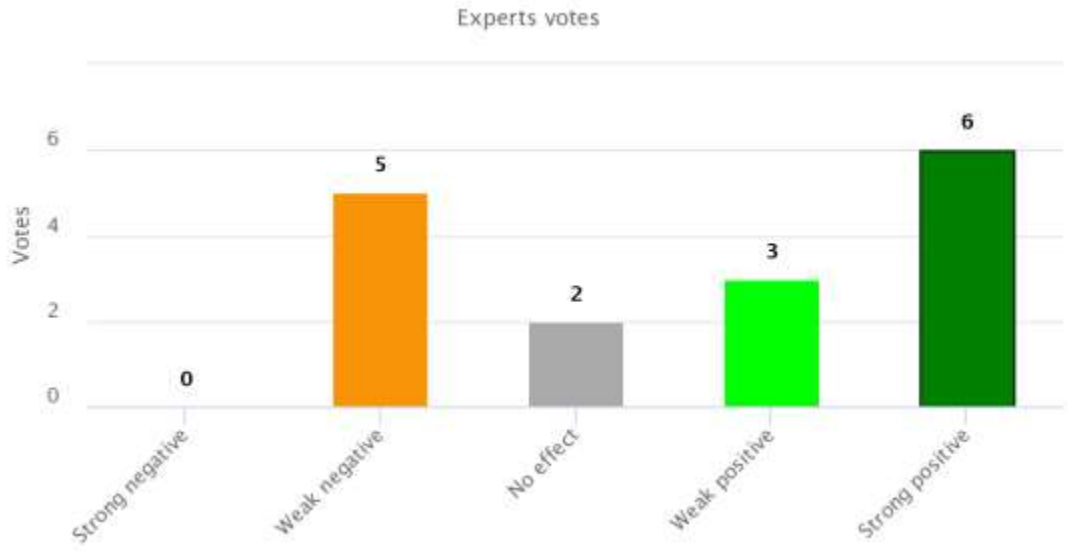
15% of the metropolitan regions would see a highly positive impact. These regions are located e.g. in the Member States in eastern Europe, northern Italy, France and southern Spain. The majority of the regions would experience a moderately positive (43%) or minor positive (42%) impact.

7 Results of the TIA quick check: Potential territorial impact considering safety aspects

7.1 The potential territorial impact on urban flood risk

The experts discussed the idea that spatial plans in the light of SDG 11.3 will take the risk of flooding in urban regions more strongly into account. Six experts considered this effect to be strongly positive, and three considered it weakly positive. However, five experts judged the effect of the indicator to be weakly negative, while two did not see a relevant effect.

Figure 14 - Workshop findings: Expert judgement: Effect on urban flood risk of the influence of the SEA Directive in the light of SDG 11.3 on urban development through spatial planning



Source: Urban impact assessment expert workshop, Brussels, 28 May 2018

The indicator depicting the sensitivity of a region according to the urban flood risk reflects the relative flood risk within urban areas by taking into account the natural exposure (predicted flooded area and mean depth) and the sensitivity of the city to flooding (population and infrastructure affected).

Regions showing a higher flood risk are expected to be more sensitive towards policies that influence flooding. Sensitivity is thus directly proportional to flood risk.

As the experts' opinions were divided, no map is presented with the trends.

8 Conclusions and policy implications

8.1 Findings based on the results of the TIA Quick check

The experts judged the effects of the influence of the SDG 11.3 on the SEA Directive and its influence on spatial plans to be predominantly positive. They identified the following effects:

- SEAs for spatial plans focusing more strongly on SDG 11.3 making cities and human settlements inclusive, safe, resilient and sustainable would contribute to reducing land consumption. Urban regions with dynamic economic development and less strict planning regulations that are currently facing a high annual land take per inhabitant could see a particularly positive impact.
- Considering the complex process of drafting and adopting urban plans, experts mentioned that significant urban infrastructure is considered to involve minor modifications, and thus does not lead to a new process of drafting and adopting impact assessment studies. The EU rules are flexible enough to allow spatial planners to solve urban challenges effectively, but the impacts of these "minor" modifications of the initial plans are not usually monitored. These projects may entail significant consequences for the urban settlement strategy, the sustainable urban mobility plan or an air quality improvement drive by the local authority. In this respect, it might ultimately be considered as an obstacle to achieving SDG 11.3.
- As reduced land consumption for built-up land reduces the pressure on green infrastructure, SDG 11.3 and its application in spatial planning would contribute to strengthening the green backbone of urban regions.
- Higher urban densities and reduced urban sprawl will reduce the traffic volume in urban regions. Due to higher settlement densities, they make it possible to provide a more attractive public transport system. Both effects would reduce car transport volumes and increase public transport, which would improve air quality. In particular urban regions that currently have high traffic density would see positive impacts. They are located e.g. in the European centre (England, Belgium, northern Germany and Paris), along the coasts (Mediterranean coast of Spain, Atlantic coast of northern Portugal) and in economically vibrant industrial areas (e.g. the Ruhr area in Germany or northern Italy).
- Spatial plans focusing more strongly on SDG 11.3 would emphasise the need for recreational opportunities and areas in a high quality to improve the quality of life of city-dwellers. The metropolitan regions that are expected to see the highest positive impacts are located in eastern Europe, for example Latvia, Poland, Romania, Bulgaria and eastern Germany, and in the South, e.g. on the Mediterranean coast of Spain and Italy, Greece and on the Atlantic coast of Spain.
- More sustainable development would induce positive economic effects. Especially less economically advanced urban regions could experience a catch-up effect. These regions

are located e.g. in Romania, Bulgaria, eastern Poland, the Baltic states, the southern Mediterranean coast of Spain and Sardinia.

- Spatial plans developed in the light of SDG 11.3 will contribute to reducing the risk of flooding in urban regions. Cities located along rivers could see particular benefits.
- As SDG 11.3 aims directly at improving structured participation of civil society in urban planning processes, a consequent improvement of spatial planning systems towards higher participation rates triggered by the SEA Directive would lead to greater efficiency and help to increase the quality of governance systems in urban planning. The urban regions expected to see the highest positive impacts are located e.g. in eastern Germany, in the eastern parts of Poland, in the Baltic states, in the northern part of Italy, in Spain and in the southern part of France.

8.2 Findings and recommendations from the expert discussion

The experts identified systemic links between SDG 11.3 and urban development through the influence of SDG 11.3 on the SEA Directive, which provides preconditions guiding the assessment of the environmental effects of spatial plans. Based on their judgement of the identified effects and the regional territorial impact patterns shown in the maps, the experts discussed consequences for the development of further European policies, and came up with the following findings and recommendations:

1. The EU should apply Sustainable Development Goals in its own policies to guarantee inter-linkages. The SDGs are interdependent and can only be tackled effectively by addressing the interlinkages in a comprehensive, integrated and effective manner and in close cooperation with partners and other stakeholders, including local and regional authorities.

2. Local and regional authorities should be given more information on the SDGs, their content and best practices for achieving them. There is a need to raise awareness among local and regional authorities, civil society, the private sector and the general public on the transformative potential of the 2030 Agenda and to raise levels of engagement and political leadership in addressing the SDGs at all levels of governance;

3. European strategies should be drawn up wherever there is a clear European interest (TEN-T, ports). At EU level, cities will be key in achieving the SDGs, as they are where most people live, where the largest share of GDP is generated, where a large proportion of EU policies and legislation are implemented and where a significant share of EU funds are spent. Opportunities, challenges and emerging policy solutions happen in cities.

4. We need a participatory process where LRAs are taken into account. There is a strong interest in creating a governance system within the reviewed Territorial Agenda post-2020 and in involving local and regional spatial planners within the EU decision-making process.
5. Experts suggested that the upcoming presidencies of the Council of the EU could promote synergies between the discussions on the implementation assessment of the Urban Agenda for the EU and the renewed Territorial Agenda beyond 2020, with a view to a more integrated approach to spatial planning and territorial governance, which should involve local and regional authorities and spatial planners in a bottom-up and evidence-based approach.
6. Experts considered that the European and national statistics authorities should develop and improve data, indicators, tools and methodologies to quantify and monitor the contribution of EU policies to the urban-related targets of the 2030 Agenda, increasing the provision of indicators detailed by NUTS 2, NUTS 3 and FUA level.

The implementation of EU policies should strive for greater efficiency and for links with the SDGs. The new Multiannual Financial Framework beyond 2020 should contribute towards achieving the Sustainable Development Goals, and one instrument could be to align the structure of the budget and to include ex-ante conditionalities in that regard into future EU sectoral policies after 2020. This nudging of national and regional reforms by the Commission should be quite subtle, but consistent monitoring should emphasise the need for them and increase implementation rates.

Appendix 1: Urban impact assessment workshop agenda

Urban impact assessment expert workshop

Implementation of the 2030 Agenda by the EU

Brussels, 28 May 2018

09:00	*Registration*
09:30	**Welcome and introduction** Kieran McCarthy, Cork City Councillor, Member of the CoR
09:45	**Introduction to the topic** • Nicolas Gharbi, European Commission representative: "EU Implementation Strategy of the New Urban Agenda" • Paulius Kulikauskas: UN-HABITAT "International Guidelines on Urban and Territorial Planning" • Marlene Simeon, CEMR: "Toolbox for localising the sustainable development goals" • Kjell Nielsson, Director of Nordregio, Affiliated Professor in Planning and Management of the Urban Green Infrastructure at the University of Copenhagen
10:45	*Coffee break*
11:15	**Explanation of the ESPON Quick Scan TIA tool** Erich Dallhammer, ÖIR GmbH
11:30	**Interactive discussion** • Dealing with cause/effect chains • Defining the types of regions affected and estimating the intensity of regional exposure Moderation: Bernd Schuh, ÖIR GmbH
13:00	*Lunch break*
14:30	*Coffee served in front of the conference room*
14:30	**Interactive discussion** (discussion on the findings, results and hypothesis)
16:30	**Policy recommendations**
17:00	*End of the workshop*

Appendix 2:
Description of the indicators used and regional sensitivity

Following the interactive discussion among experts, the following indicators were selected and entered into the ESPON TIA Quick Check model:

Quality and accountability of government services

Definition of sensitivity	**Regions showing lower quality and accountability of government services may benefit more from a policy which is expected to improve governance quality.**
Description	The indicator is computed on the basis of the University of Gothenburg's Quality of Government Institute (QoG) Quality sub-index and the national Worldwide Governance Indicators. In particular the regional QoG Quality sub-index is anchored at national level to the average of the WB-WGI indicators on Government Effectiveness and Voice & Accountability. Data is standardised as z-scores.
Source	DG Regio RCI 2016 on University of Gothenburg, European Quality of Institutions Index
Reference year	2013
Original Indicator Spatial Reference	NUTS 3, 2013

People at risk of poverty or social exclusion

Definition of sensitivity	**Regions which display a higher at-risk-of-poverty rate are likely to experience more acute poverty. Sensitivity towards a policy that could influence poverty is directly proportional to the at-risk-of-poverty rate.**
Description	The indicator refers to the situation of people who are either at risk of poverty, severely materially deprived, or living in a household with a very low work intensity.
Source	Eurostat
Reference year	2015
Original Indicator Spatial Reference	NUTS 3, 2013

Recreational areas

Definition of sensitivity	**Regions showing higher recreational opportunities are expected to be more sensitive to a policy whose implementation could have a positive impact on green urban areas or river/lake/sea shore.**
Description	Capacity of urban ecosystems providing recreational opportunities
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Concentration of NO_2

Definition of sensitivity	**Regions showing greater concentrations of NO_2 are expected to benefit more from a policy that is intended to reduce air pollution.**
Description	Average concentration of NO_2 in micrograms/m^3 – This indicator is calculated using Land Use Regression (LUR) Models. The LUR model was built using annual mean NO_2 concentrations for 2010 from the monitoring sites included in the AirBase database (dependent variable) and several parameters (independent variables) defined within a Geographic Information System.
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Concentration of PM10

Definition of sensitivity	**Regions showing greater concentrations of PM10 are expected to benefit more from the implementation of a policy intended to reduce air pollution.**
Description	Average concentration of PM10 in micrograms/m^3 – This indicator is calculated using Land Use Regression (LUR) Models. The LUR model was built using annual mean PM10 concentrations for 2010 from the monitoring sites included in the AirBase database (dependent variable) and several parameters (independent variables) defined within a Geographic Information System.
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Hectare of green infrastructure per capita

Definition of sensitivity	**Regions with more green infrastructure per capita may be less exposed to environmental impacts in certain fields, e.g. heat islands etc.**
Description	The amount of green infrastructure per capita is calculated by reclassifying the LUISA land use map and is given in ha per capita. Green infrastructure includes natural and semi-natural areas, features and green spaces in rural and urban, terrestrial, freshwater, coastal and marine areas.
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Built-up areas per inhabitant

Definition of sensitivity	**Regions with a higher surface area of built-up areas per inhabitant are expected to be more sensitive to the implementation of a policy that aims to reduce land consumption.**
Description	Total surface area of built-up areas (buildings detected by means of satellite imagery analysis) per inhabitant in square metres
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Annual land take per inhabitant

Definition of sensitivity	**Regions with a higher amount of land take per inhabitant are expected to be more sensitive to the implementation of a policy aiming to reduce soil sealing or causing more urbanisation.**
Description	The indicator measures how much land initially covered by agriculture, forests and semi-natural areas is converted into housing, commercial, industrial and service areas over time. This indicator first takes the annual average of total land take, and then divides it by the previous year's population in order to find the annual land take per inhabitant in square metres.
Source	JRC, LUISA
Reference year	2010-2030
Original Indicator Spatial Reference	FUA

Economic growth (GVA/capita)

Definition of sensitivity	**Regions with lower GVA per capita are expected to benefit more from the implementation of a policy influencing economic development.**
Description	Gross Value Added per inhabitant in euro.
Source	Eurostat
Reference year	2014
Original Indicator Spatial Reference	NUTS 3, 2013

Urban flood risk

Definition of sensitivity	**Regions showing higher flood risk are expected to be more sensitive to a policy affecting the risk of flooding**
Description	A composite indicator reflecting the relative flood risk within urban areas by taking into account the natural exposure (predicted flooded area and mean depth), and the sensitivity of the city to flooding (population and infrastructure affected).
Source	JRC, LUISA
Reference year	2020 (projection)
Original Indicator Spatial Reference	FUA

Co-financed by the European Regional Development Fund

Inspire Policy Making with Territorial Evidence

ESPON 2020

ESPON EGTC

4 rue Erasme, L-1468 Luxembourg
Grand Duchy of Luxembourg
Phone: +352 20 600 280
Email: info@espon.eu
www.espon.eu

The ESPON EGTC is the Single Beneficiary of the ESPON 2020 Cooperation Programme. The Single Operation within the programme is implemented by the ESPON EGTC and co-financed by the European Regional Development Fund, the EU Member States and the Partner States, Iceland, Liechtenstein, Norway and Switzerland.