European Committee of the Regions

ESPON

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Territorial Impact Assessment

Climate Targets

Staff working document

European Committee of the Regions

Online workshop
25-26 February 2021

ENVE
Commission

Territorial Impact Assessment

Climate Targets

Disclaimer

This report was produced by the European Committee of the Regions secretariat to assist the rapporteur and the ENVE commission in preparing the opinion on *Stepping up Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people,* by the rapporteur, Vincent Chauvet (FR/RE), Mayor of Autun. This report will be shared with the European Commission and the European Parliament.

The findings of this report are not binding on the European Committee of the Regions and do not prejudice the final content of its opinions. This report is for information purposes only.

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This territorial impact assessment report is the outcome of an online expert workshop held by the European Committee of the Regions and ESPON EGTC on 25 and 26 February 2021.

The ESPON TIA Tool is designed to support the quantitative assessment of potential territorial impacts in line with 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 Legislations, Policies and Directives (LPDs).

This report documents results of the territorial impact assessment expert workshop about the targets of the 2030 climate & energy framework drawn up by the EU. It serves for information purposes only. This report and the maps represent views and experiences of the participants of the workshop. It is meant to be used for decision support only and does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee.

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Acronyms and legend

CoR	European Committee of the Regions
EP	European Parliament
ESPON	European Observation Network for Territorial Development and Cohesion
LRA	Local and Regional Authority
MS	Member State(s)
NUTS	Nomenclature of territorial units for statistical purposes
OIR	Austrian Institute for Spatial Planning (ÖIR)
TIA	Territorial Impact Assessment

Effects of the directives – colour code

- Positive effects
- Minor positive effects
- Neutral
- Minor negative effects
- Negative effects

Legend – direction of effects

- Increase
- Decrease

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1 Introduction

In order to improve the quality of life of current and future generations, a roadmap with actions for the months and years ahead has been designed for collective recovery and a common future. Even before the COVID-19 outbreak, the European Union drafted a powerful strategy that would transform society, the economy and the climate. Today, with a view to tackling climate change and building a strong green economy and society, the European Green Deal, the NextGenerationEU Recovery Plan and the MFF 2021-2027 aim to make Europe a climate-neutral continent by 2050.

The European Green Deal, described as "a new growth strategy that aims to transform the EU into a fair and prosperous society, with a modern, resource-efficient and competitive economy towards the overall objective of EU carbon neutrality by 2050", is the flagship initiative of the European Commission. Designed to transform and reorient the European Union's society towards a more sustainable way of life, it requires all EU actions and policies to contribute to achieving the mutual climate-neutrality objective and a successful and just transition towards a sustainable future. The Commission announced that it will improve the way its Better Regulation guidelines and supporting tools address sustainability and innovation issues, with the aim of ensuring that all EU initiatives live up to the green oath to "do no harm".

Serving as the basis for a complete transformation of the EU, the European Green Deal will require major changes across all EU policies, going well beyond what is usually considered climate action, touching on all aspects of European citizens' daily lives.

While the CoR supports raising the climate target to a reduction in greenhouse gas emissions of at least 55%, in order to do so, the tailor-made direct allocation of funds for locally and regionally adapted measures is necessary to remain on track to meet the targets.

The CoR points out that Europe's local and regional authorities (LRAs) are part of the rich and diverse governmental and democratic structure of the EU and should be treated as such. Enabling LRAs to contribute systematically throughout the policy development cycle, and to the assessment and review, would show that the important role of multilevel governance in climate policies is recognised.

This report was produced on the basis of the territorial impact assessment workshop that took place on 25 and 26 February 2021 to provide further input to the CoR opinion entitled *Stepping up Europe's 2030 climate ambition: Investing in a climate-neutral future for the benefit of our people,* rapporteur, Vincent Chauvet, Mayor of Autun.

2 Methodology: ESPON Quick Check

The concept of territorial impact assessment (TIA) aims to show the regional differentiation of the impact of EU policies. The ESPON TIA Tool[1] is an interactive web application that can be used to support policymakers and practitioners in identifying potential ex-ante territorial impacts of new EU Legislation, Policies and Directives (LPDs). The 'ESPON TIA Quick Check' approach combines a workshop setting for identifying systemic relations between a policy and its territorial consequences with a set of indicators describing the sensitivity of European regions.

This approach 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. The results of the guided expert discussion are judgements about the potential territorial impact of an EU policy, in different thematic fields (the economy, society, the environment, governance) for a range of indicators. These results are fed into the ESPON TIA Quick Check web tool.

The web tool translates the combination of the expert judgements on exposure with the different sensitivity of regions into maps showing the potential territorial impact of EU policy at the NUTS3 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 to this quick check on the potential territorial effects of an EU policy proposal.

The workshop on the targets of the 2030 climate and energy framework drawn up by the EU (hereafter: climate targets) was held on 25 and 26 February 2021 in the form of an online event, and brought together a number of experts representing different organisations and LRAs.

Three moderators from the OIR, provided by ESPON, prepared and guided the workshop and handled the ESPON TIA tool.

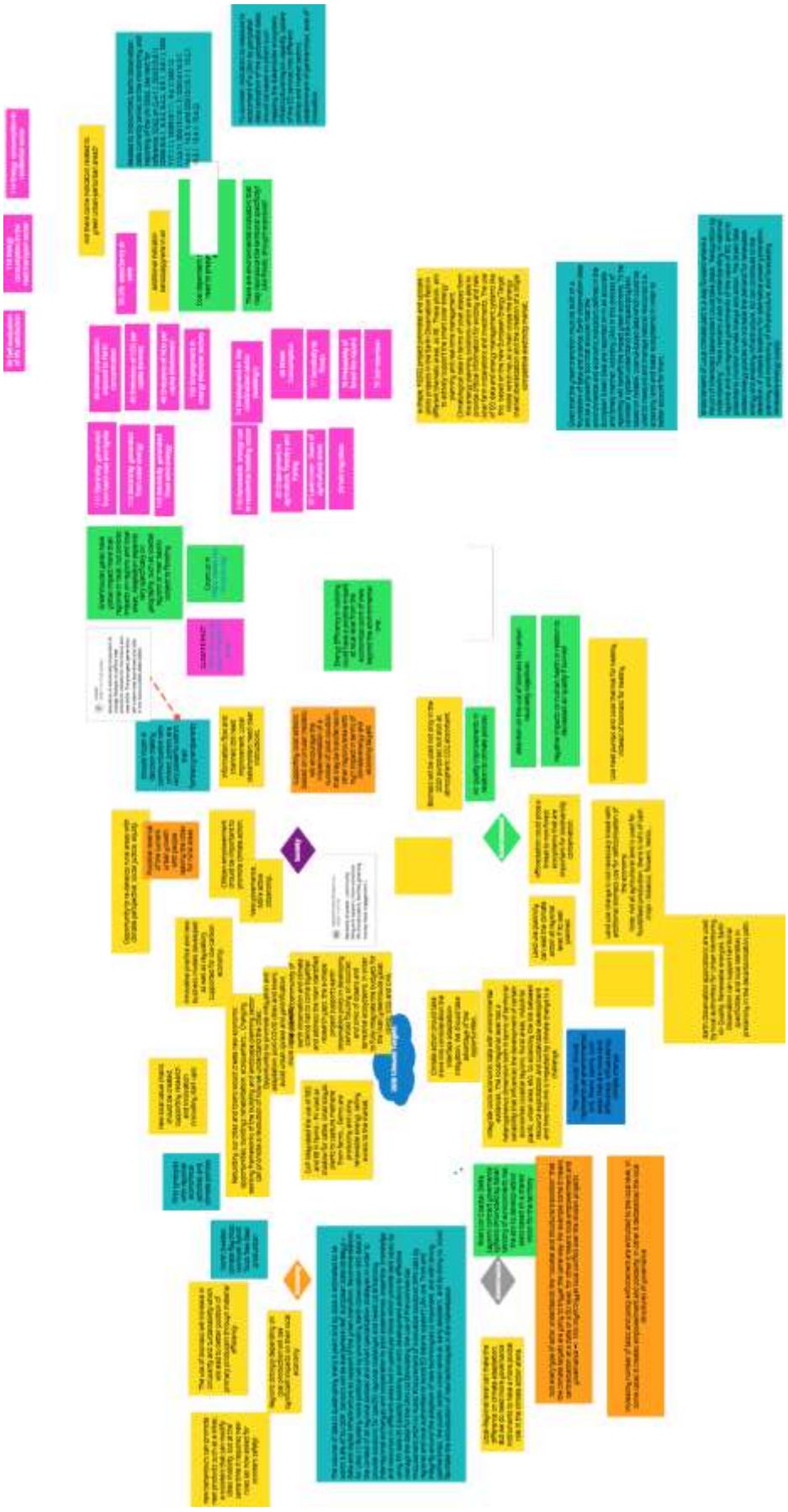
2.1 Identifying the potential territorial effects in terms of economic, societal, environmental and governance-related aspects – drafting a conceptual model

In the first step of the TIA workshop, the participating experts discussed the potential effects of the climate targets, using a territorial or place-based approach.

This discussion revealed potential territorial impacts of the climate targets, using economic, societal, environmental and governance-related indicators. The participants identified potential linkages between implementation of the strategy and the effect on territories, including interdependencies and feedback loops between different effects (see figure below).

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

Figure 1: Workshop findings: Systemic picture



Source: Territorial impact assessment expert workshop, 25 & 26 January 2021, OIR

2.2. Picturing the potential territorial effects through indicators

In order to assess the potential effects pictured in the conceptual model, suitable indicators need to be selected for the parameters that the experts discussed in the fields of the economy, the environment, society and governance. The availability of data for all NUTS 3 regions poses certain limitations on the indicators that can be used. From the available indicators that the ESPON TIA Quick Check web tool offers, the experts chose the following indicators to describe the identified effects.

Picturing potential territorial impacts in terms of economic indicators

- Employment in energy-intensive sectors
- Employment in the construction sector (buildings)
- Employment in agriculture, forestry and fishing

Picturing potential territorial impacts in terms of environmental indicators

- Renewable energy use in the residential building sector
- Electricity generated from wind energy
- Electricity generated from solar energy
- Electricity generated from hard coal and lignite
- Urban population exposed to PM10 concentrations
- Emissions of NOx per capita (kilotonnes)
- Emissions of CO2 per capita (tonnes)
- Probability of forest fire hazard
- Sensitivity to floods
- Soil retention
- Water consumption

Picturing potential territorial impacts on the basis of societal indicators

- Life expectancy at birth

2.3. Judging the intensity of the potential effects

The workshop participants were asked to estimate the potential effects of the climate targets. They judged the potential effect on the territorial welfare along the following scores:

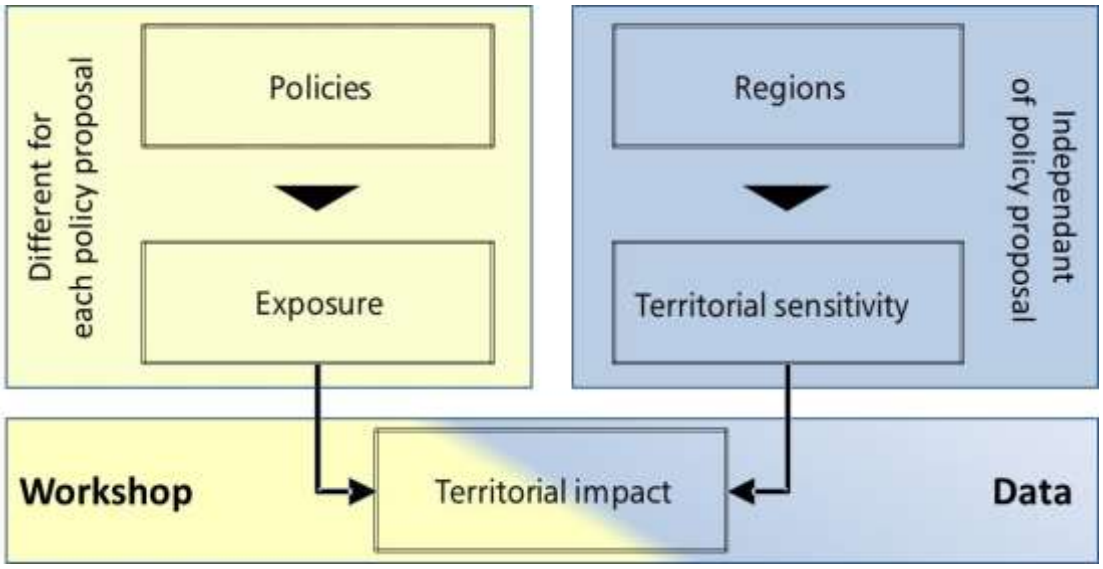
- ++ strong advantageous effect on territorial welfare (strong increase)
- + weak advantageous effect on territorial welfare (increase)
- o no effect/unknown effect/effect cannot be specified
- - weak disadvantageous effect on territorial welfare (decrease)
- -- strong disadvantageous effect on territorial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

2.4. Calculating the potential 'regional impact' – Combining the expert judgement with regional sensitivity

The ESPON TIA Quick Check combines the expert judgement on the potential impact of climate targets (exposure) with indicators describing 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 (see illustration below).

Figure 2: Exposure x territorial sensitivity = territorial impact



Source: OIR, 2015.

- 'Territorial Sensitivity' describes the baseline situation of the region according to its ability to cope with external effects. It is a characteristic of a region that can be described by different indicators regardless of the topic analysed.
- 'Exposure' describes the intensity of the potential effect of climate targets on a specific indicator. Exposure illustrates the experts' judgement, i.e. the main findings of the expert discussion at the TIA workshop.

2.5. Mapping the potential territorial impact

The result of the territorial impact assessment is presented in maps. The maps displayed below show potential territorial impacts based on a combination of the expert judgement on exposure with the territorial sensitivity of a region, described by an indicator on NUTS3 level. Whereas the expert judgement is a qualitative judgement (i.e. a strong advantageous effect on territorial welfare/moderate advantageous effect/no effect/moderate disadvantageous effect/strong disadvantageous effect), the sensitivity is a quantitative indicator.

3 Debate and qualitative analysis

3.1 Introductory remarks

The workshop started with a statement by the rapporteur, Vincent Chauvet, whose opinion will be discussed in June's plenary session. Mr Chauvet noted that the strategy to achieve the 55% goal will lead to a substantial raft of legislation and will have a huge impact on our territories. For this reason, he highlighted the importance of knowing the impact at local level, because this will be different in each region.

Mr Chauvet also stated that lawmakers are not aware, at either national or local level, of these ambitions and/or are not prepared for the related measures. We are not only talking about incremental policy but about a radical and structural change of the way we see society. Therefore, the rapporteur wants to raise awareness in the CoR, and among local and regional authorities.

The second speaker was Ms Fortun, from DG CLIMA, who started by answering the question of what are the key ingredients for transforming society, the climate and the economy.

- The first key ingredient is to have a vision and an action plan to transform Europe so that it becomes more just and resilient. Ms Fortun pointed that it is about getting everyone involved in all sectors.

- The second ingredient is funding: national funds, EU funds, but also private investment. Ms Fortun stressed that regions are essential for this transformation because local communities often implement changes and allow citizens to have a voice. They have a key role in adaptation to climate change.

- The third key ingredient is raising awareness. Ms Fortun underlined that the climate pact can only happen if there is a wide, inclusive coalition. The climate pact is about partnership and this transition needs to be supported by businesses and SMEs. For small towns, the way all of these stakeholders can engage is very diverse.

The third introductory speech was given by Mr Vis, who stated that this is the first time climate targets have been set in EU legislation. He gave the example of a tree to explain that climate law is the trunk being negotiated; the future policies that will be developed are the branches; finally, the leaves of the tree are all the places in Europe where the policies will be implemented.

Mr Vis detailed a number of policy areas, including energy efficiency, smart and sustainable mobility, land use and forestry.

- In energy efficiency, a legislative proposal aims to increase the number of projects and houses improved through mandatory renovation projects, which will expanded to cover government and public buildings in all Member States. Additionally, the renovation of housing entails the major challenge of keeping housing affordable.

- In smart mobility, Mr Vis underlined that local authorities can and will play a significant part when it comes to electric vehicles, charging infrastructure, public transport, access restrictions or encouraging cycling.

– In land and forest, Mr Vis highlighted the importance of reforestation. Furthermore, spatial planning usually depends on local and regional authorities, and therefore a great number of initiatives need to come from the bottom up.

The workshop proceeded with the experts engaging in a brainstorming exercise.

3.2 Capacity building and changing governance

The experts agreed on the important role of the local level in adapting climate policies. Experts also agreed that citizen empowerment should play a major role in promoting climate action and that we should build new forms of climate governance to work with stakeholders. However, it was stated that we do need to change governance instruments to give them a more pivotal role in climate action.

One expert noted that in terms of "societal and structural transition", the climate targets are not going to be triggered in the same way and that this might create local conflicts. For instance, some targets may require centralisation at the state or EU level, but others may require local empowerment and governance.

Furthermore, regarding the increasing number of tasks and policies to be enforced at the local level, experts considered that in some cases, this creates empowerment and solidarity but in others, it destabilises local governance structures.

One expert gave an example of what it is being done in Italy, where certain areas shaped by natural features (such as rivers or lakes) develop governance systems (promoted by the Italian Ministry of the Environment) with the aim of developing action plans related to a shared vision of those particular territories. This expert's view reflected another expert's comment, to the effect that a "new local" should could emerge, representing an environmental unit – such as river basins – that are more (and differently) influenced by climate change.

Finally, there was a recommendation to integrate socio-economic data with environmental evidence. This consists of linking resource exploitation and sustainable development. This would mean evaluating how this link is impacted by climate change. Experts agreed that this can be a challenge but makes sense, since the heterogeneous nature of territories (coastal regions, rural areas, industrial plants, urban area, etc.) influences the development of local and regional economies.

3.3 Taking society at large into account

It was a view shared among the group of participants that we should include young people in decision-making and that communication with schools and young people is very powerful, not only in itself, but also as a channel to reach families at large, and to transfer knowledge from younger to older generations. Another expert added that education is extremely important to change lifestyles and to define new economic models for the future. Ultimately, the businesses and jobs of the future will be created by the current younger generations. A change in social and economic models also involves them.

One expert was concerned that information flow and channels still need improvement; that local stakeholders experience difficulties in being included in wider European policy discussions and need better, clearer and more accessible information.

Regarding the post-COVID-19 situation, experts underlined the opportunity to promote strategies of mitigation and adaptation. Among the main challenges are the prevention of urban sprawl, gentrification and better social cohesion. Moreover, rural areas could find new opportunities to redevelop with a climate-conscious perspective. The pandemic might result in a reversal of the current urban growth pattern, with people leaving the cities for rural areas.

Additionally, experts agreed that supporting local actions (based on circular models) will encourage the implementation of a number of pilot solutions that may be transferred to other regions/areas with a high impact in terms of climate/energy and economy targets. One expert added that empowering consumers to adopt environmentally-friendly behaviours could also help achieve this.

Lastly, one expert considered that, although greenhouses gases have a global impact, policies have an impact on regions and local areas. Therefore, adaptation means adapting these global goals to the specific geographical features of each region. With increasing levels of greenhouse gases causing our climate to change, it is important to understand exactly where these gases come from and how they disperse in the atmosphere. Concerning carbon dioxide and methane – two of the main human-made gases driving global warming. Local and regional authorities can access that information via the EU's Copernicus programme[2]

3.4 The central position of innovation and Research & Development

The experts discussed how to develop a low-carbon economy with innovative practices based on new business models, as well as improved regulation. For example, new behaviours can promote new products such as e-bikes and e-scooters, which are modifying mobility in cities. At the same time, these require new rules concerning safety, for example.

One expert focused on the importance of data and digital infrastructure to support the green transition. They stated that the volume of data is quadrupling every 5 years and is estimated to be worth 5.8% of EU GDP by 2025 (according to the European Data Strategy[3]).

(1) Developing greater political will by promoting Earth Observation (EO) data[4] for all regional policies and smart specialisation strategies, to provide solutions for specific regional challenges and needs.

(2) Enhancing interregional exchanges and cooperation to pool experiences, expertise, knowledge and resources in different areas, in particular the most promising cases, by using EO data.

(3) Capacity building and skills development actions to effective manage the data for LRAs. The expert stated the need to take actions to match needs and capacities in the use of EO data by LRAs.

[2] https://climate.copernicus.eu/.
[3] https://eur-lex.europa.eu/legal-content/EN/TXT/HTML/?uri=CELEX:52020DC0066&from=EN .
[4] Resources available, for example, via ESA: https://earth.esa.int/web/guest/-/eo-data-and-data-access-6245.

(4) Stimulating the use of pre-Commercial Procurement (PCP) or Public Procurement of Innovative Actions (PPI) calls by regional and local authorities to boost EO data to support LRA use. Trust and integrity around the adoption of new technologies is important and with strong partnerships, the public sector could serve as "early adopters" and by doing so, could facilitate the introduction of new technologies in the marketplace.

Regarding the use of energy, experts discussed the use of biomass, which can make a major contribution towards a sustainable and circular economy. This would in turn potentially lead to more favourable positions of primary producers through material efficiency.

Regions heavily dependent on coal production and coal energy will see significant impacts on their local economy. An example given by one expert concerns the Northern Sweden climate flagship Northvolt Hybrit fossil free steel production. There is a surplus of renewable energy and electricity thanks to wind- and hydro-power and also biomass energy. This expert drew attention to misconceptions about the use of biomass: as long as biomass growth is greater than biomass use for energy production, there is carbon neutrality.

3.5 The role of economic actors in making the climate transition a success

Synergies between regional economic activities and climate policies are of the utmost importance. New local value chains should be created, supporting research and innovation (including start-ups), according to some experts. One participant stated that diversification of natural resources on which economic production rests – diversification based on the specific advantages of each territory (such as marine resources, agro forestry, etc.) – is crucial. The question then becomes how we can use this diversity and adapt it to climate – and economic – targets. As we are moving towards local-based economies, we can promote regions that are less dependent on fossil fuel. Looking at our resources at the local level also means evaluating which of them are compromised by climate change. According to the expert, the idea would then be to promote a diversity of pilot projects reflecting territorial variabilities. Such diversity would be in itself valuable, since it could generate discoveries that, despite being context-dependent, might be relevant on a larger scale.

One expert talked about how farms are producing and using renewable energy, selling excess energy to the market. The Common Agricultural Policy has integrated the use of renewable energy sources and energy efficiency with, for example, photovoltaic panels used as shade for cattle or small biogas plants to capture methane from farms.

Regarding urban areas, rebuilding our cities and towns would create new economic opportunities, for example in the construction sector, via rehabilitation and energy efficiency. In the aftermath of the current pandemic, and having understood the potential for reducing commuting flows, a revolution in how we understand work, housing and transport could have profoundly positive effects on the environment.

Lastly, experts agreed that the earth observation and climate science community has to come together and address the main research gaps that have been identified. One expert added that the e-shape project[5] supports Earth Observation pilots based on European capabilities and know-how developed

[5] https://cordis.europa.eu/project/id/820852; https://e-shape.eu/.

under Copernicus[6] and aimed at developing services in areas directly relevant to the climate targets, including food security and sustainable agriculture (contributing to SDG 2), products and services for renewable energy development and management, ecosystems and water resource management and climate change.

3.6 Addressing conflicting goals

In the environmental discussion, most experts addressed the use of biomass energy. Some experts were concerned about the use of biomass for carbon neutrality objectives, considering the promotion of biomass for domestic heating systems to be a major problem. On the other hand, other experts said that we need to defossilise our society and that there is evidence that there is no need to expand land use for biomass. One expert suggested using heat pumps and solar thermal for heating instead of biomass for heating. Lastly, another participant stated that biomass-based activities will be crucial, not only in the 2030 goals but also as an atmospheric CO2 absorbent.

Conflicts surrounding the use of land are not to be dismissed. Conflicting goals, or conflicting policies aimed at attaining such goals, will impact the environment and the behaviour of social actors. Reforestation, for example, while important for creating carbon sinks, could be in direct competition with other activities that might be important for both economies and the environment. Non-forest ecosystems, for example, are also relevant in terms of biodiversity conservation.

Experts therefore reiterated the idea that synergies between regional economic activities and climate policies must be found. Data can help decision-makers, businesses, and citizens at large take better, more sustainable decisions. Policy-makers, the private sector and research groups must cooperate to make meaningful progress on this sustainable transition.

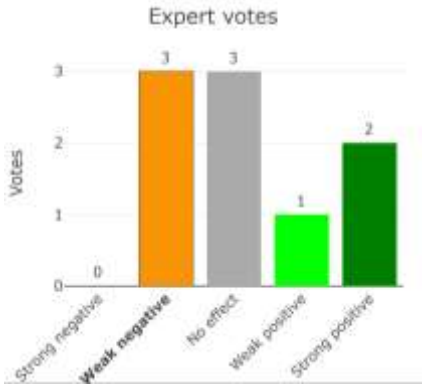
[6] https://www.copernicus.eu/en/copernicus-services.

4 Expected economic effects

4.1 Employment in energy-intensive sectors

Stricter measures to increase energy efficiency or to reduce energy use in industries are likely to have an effect on those industries. While the resulting effects might be negative, e.g. as a result of the greater efforts necessary for production or a need for high investments to cope with new regulatory measures, they might also be positive as increased energy efficiency, for example, can significantly reduce operating costs. Consequently, the result of the experts' voting was ambiguous. Three experts voted for positive (two for strong positive and one for weak negative) effects, while three experts voted for (weak) negative. Three did not see a relevant effect.

Figure 3: Result of the expert judgement: employment in energy intensive sectors affected by the climate targets



Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

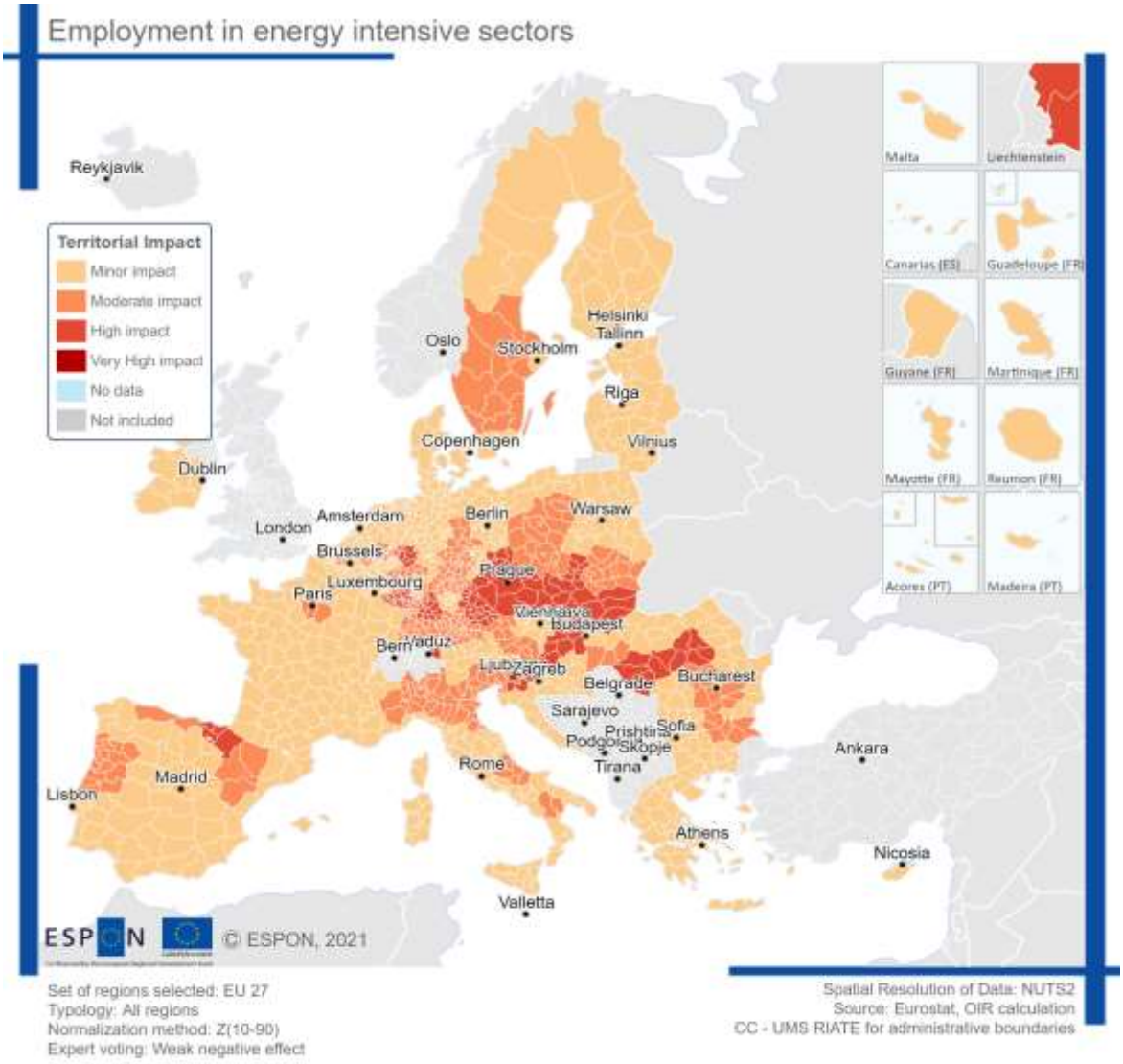
The indicator depicts the share of employment in energy-intensive sectors out of total employment (reference year: 2018). It has been calculated ad hoc based on data from Eurostat. Sectors that are considered energy-intensive are the manufacture of coke and refined petroleum products, chemical products, non-metallic mineral products, metal products, as well as coal and lignite mining and the manufacture of motor vehicles[7]. Regions with a higher share of jobs in energy-intensive sectors are expected to be worse affected by the climate targets. Sensitivity is thus directly proportional to the share of the total workforce employed in these sectors.

The following map shows the potential territorial impact of the measures linked to the climate targets on employment in energy-intensive sectors. It combines the expert judgment of a slightly negative effect with the given sensitivity of regions. The impact on 12% of the regions could be highly negative. The Czech Republic, Slovakia and Slovenia would be badly affected, while other Member States (Germany, Poland, Romania, Austria and Spain) are expected to be affected extremely negatively only at regional level. Stronger effects are thus concentrated mainly in Eastern Europe, as well as some industrial clusters in northern Italy, the industrial centres of eastern and southern Germany as well as

[7] The World Bank report *The Growing Role of Minerals and Metals for a Low Carbon Future* (https://documents.worldbank.org/en/publication/documents-reports/documentdetail/207371500386458722/the-growing-role-of-minerals-and-metals-for-a-low-carbon-future) estimates the rise in demand for metals in low-carbon energy supply scenarios, as well as the relevant metals and alerts to the critical role that mining and metals will need to play in a global zero carbon transition. Informed renewable energy policy planning can benefit from the development of Earth-observation-based products and services for energy and mineral management.

northern Spain. 29% of regions would have a moderately negative impact and the majority a minor negative impact.

Map 1: employment in energy-intensive sectors affected by the climate targets – expert judgement: weak negative effect

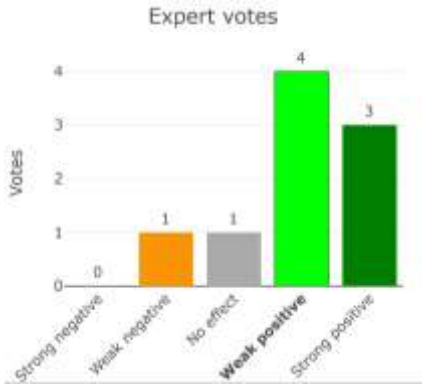


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

4.2 Employment in the construction sector (buildings)

One particular aspect of improving the EUs climate protection efforts relates to the building sector. A considerable share of the EUs building stock is not energy-efficient and is in need of renovation to meet energy-saving goals. Consequently, measures implemented to achieve the climate targets could stimulate the building sector by promoting energy-saving measures in buildings. Furthermore, the experts discussed the need to rebuild urban quarters as well, implementing local green, cooling structures and improving the quality of life. As a result, new job opportunities could be created. The majority of experts shared this point of view and thus voted for a positive (three strong and four weak) effect. Only one expert voted for weak negative and one expert did not consider this effect to be relevant.

Figure 4: Result of the expert judgement: employment in the construction sector (buildings) affected by the climate targets

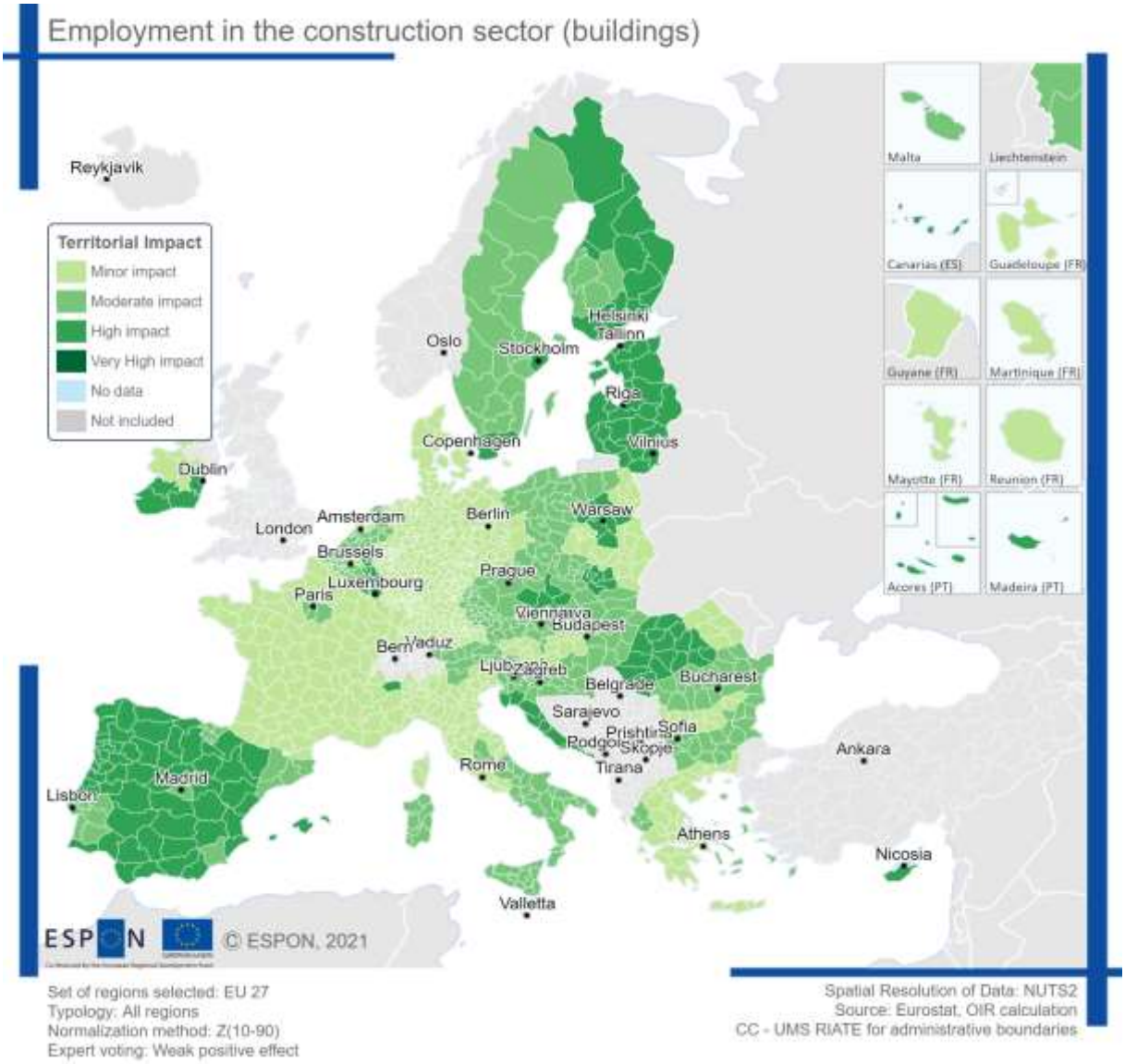


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator shows the share of employment in the building sector on total employment (reference year: 2015). It has been calculated ad-hoc based on the data from Eurostat. Regions with a higher share of jobs in the building sector are expected to be affected more by the measures related to the climate targets. Sensitivity is thus directly proportional to the share of employment in the building sector.

The following map shows the potential territorial impact of the climate targets on employment in the building sector. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. 15% of the regions would experience a highly positive impact. Spain and the Baltic States would be affected the most, with Portugal, Finland and Cyprus also highly benefiting in most regions. Some regions in Ireland, Sweden, Belgium, Poland, Czech Republic, Romania and Croatia potentially also encounter highly positive effects. 29% of the regions are expected to experience a moderately positive impact and the other regions only a minor positive impact.

Map 2: employment in the construction sector (buildings) affected by the climate targets – expert judgement: weak positive effect

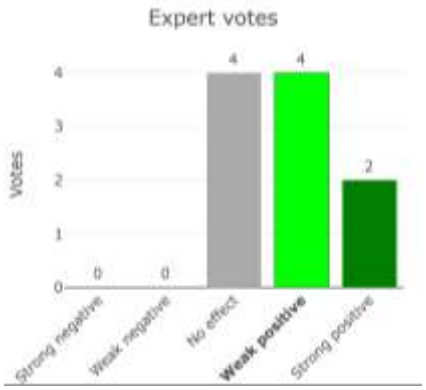


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

4.3 Employment in agriculture, forestry and fishing

Agriculture and forestry are activities highly relevant to the production of greenhouse gases, but at the same time play a considerable role in implementing measures to reduce climate impacts. Supported by national and EU-level schemes (e.g. in the implementation of the CAP), a wide range of activities fostering the use and production of renewable energy in agriculture are implemented. From installing solar panels on grazing land to capturing and using farm-produced methane in small biogas plants, activities are plentiful. Consequently, experts assessed that regions with a high share of agricultural workers could benefit more from the policies. The majority of the experts saw a positive effect (two strong, four weak). Four experts did not see this indicator as relevant.

Figure 5: Result of the expert judgement: employment in agriculture, forestry and fishing affected by the climate targets

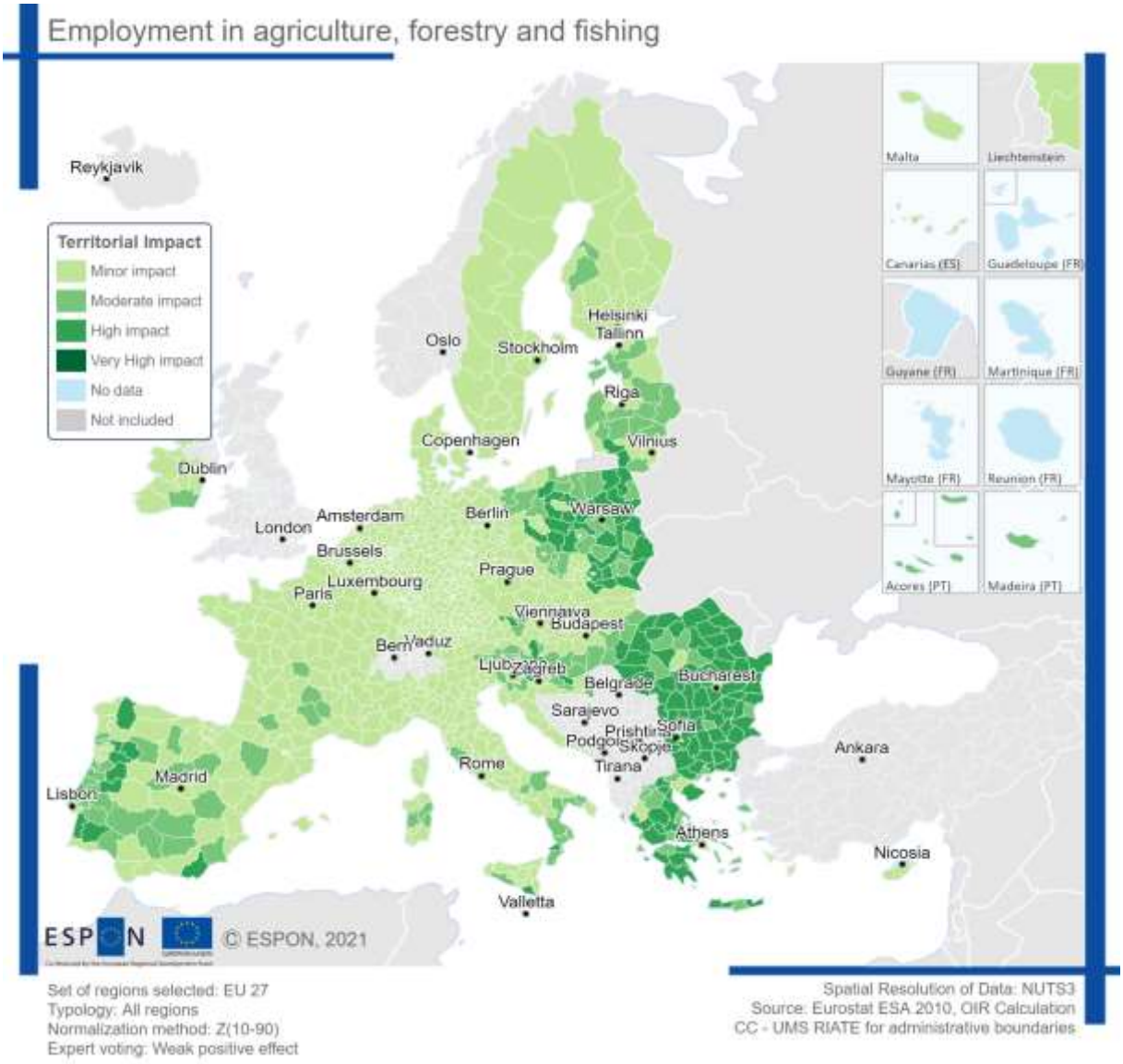


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator for employment in agriculture, forestry and fishing depicts the share of employment in these sectors in terms of total employment (reference year: 2013) It has been calculated ad hoc based on the data from Eurostat. Regions with a higher share of employment in the primary sector are expected to be more seriously affected by the climate targets. Sensitivity is thus directly proportional to the share of employment in agriculture, forestry and fishing.

The following map shows the potential territorial impact of the climate targets on employment in agriculture, forestry and fishing. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. 11% of the regions could experience a highly positive impact. Many regions in Eastern and South-eastern Europe, as well as in Portugal, are expected to experience the highest impact, but a strong regional differentiation is visible in those countries as well. Other regions that are also affected very positively can be found in Spain, Italy, Austria, Slovenia and Hungary. 11% of the regions would encounter a moderately positive impact. Most of these regions are located in the aforementioned countries. The majority of the regions are expected to experience a minor positive impact.

Map 3: employment in agriculture, forestry and fishing affected by the climate targets – expert judgement: minor positive effect



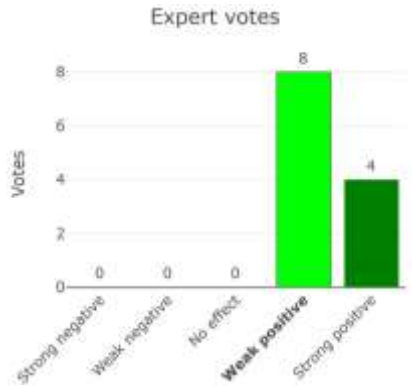
Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5 Expected environmental effects

5.1 Renewable energy use in the residential building sector

Energy use for heating or cooling is one of the main factors driving energy demand, especially in countries that experience more severe temperatures or temperature fluctuations. Many initiatives to tackle these issues are already ongoing and expected to be further developed and mainstreamed in the context of the EUs climate actions. These include the use of biomass, heat pumps or solar thermal energy for the building sector. All experts judged this effect as positive (four strong, eight weak).

Figure 6: Result of the expert judgement: regions in terms of renewable energy use in residential building sector and the impact of the climate targets

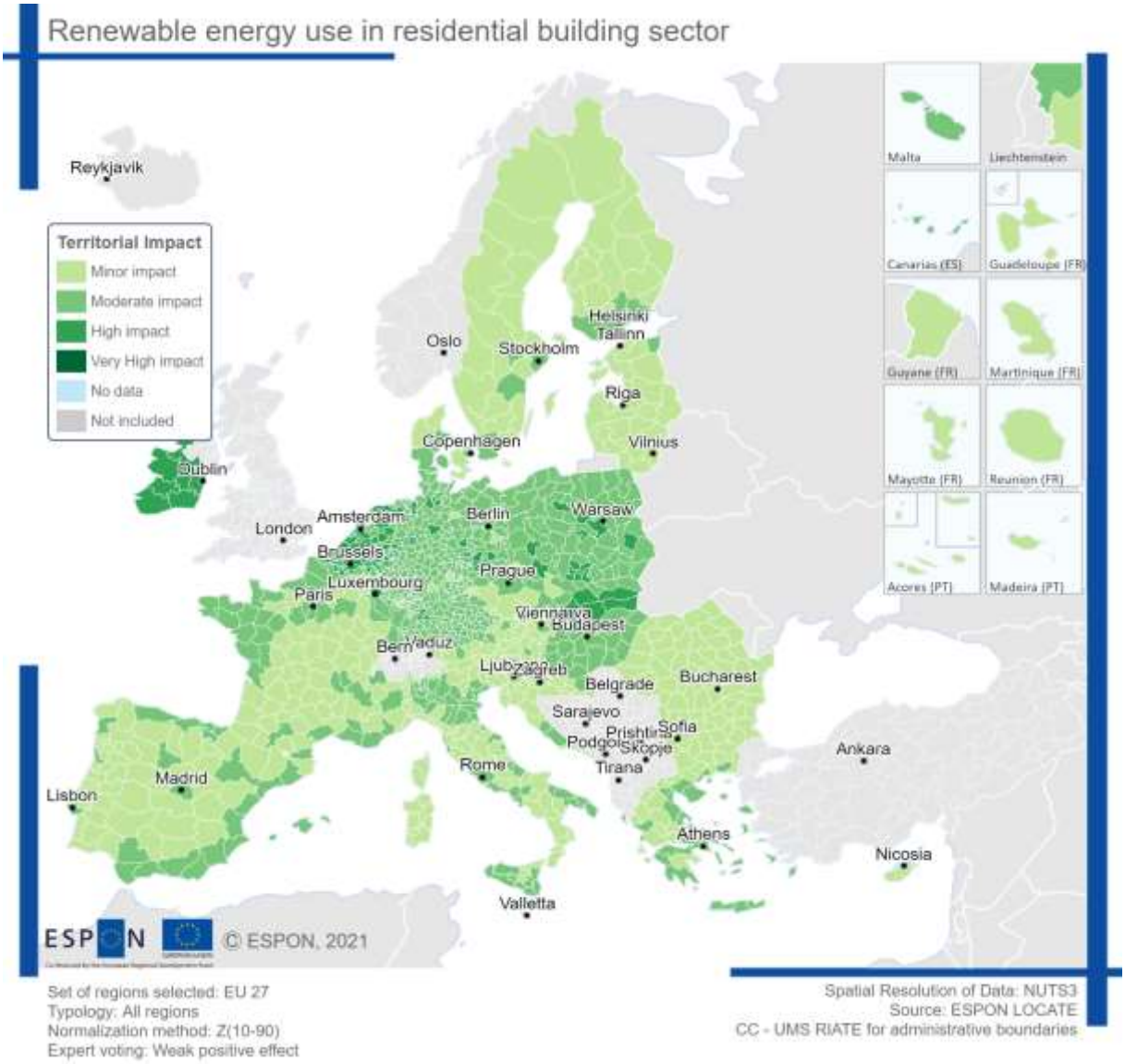


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

This indicator depicts the share of renewable energy carriers in final energy consumption (excluding electricity) for space heating, cooling, and water heating in the residential building sector (reference year: 2012). Regions with a lower share of renewable energy carriers in this sector are likely to benefit more from actions implemented in relation to the climate targets. Sensitivity is thus inversely proportional to the share of renewable energy use in the residential building sector.

The following map shows the potential territorial impact of the climate targets in terms of regional renewable energy use in the residential building sector. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. 22% of the regions could experience a highly positive impact. The whole of Ireland and Slovakia would see the highest impact. Another cluster can be identified in the region covering Netherlands, Belgium and the neighbouring area in Germany. Further regions that could potentially see a highly positive impact are Prague, Vienna, Budapest, Zagreb, Paris and other bigger cities in Germany and Poland. 49% of the regions are expected to see a moderately positive impact and 34% of the regions a minor positive impact. It is particularly striking that coastal regions are likely to benefit throughout Europe, not only in Mediterranean regions but also in central and northern Europe.

Map 4: regions in terms of the renewable energy use in the residential building sector and the impact of the climate targets – expert judgement: weak positive effect

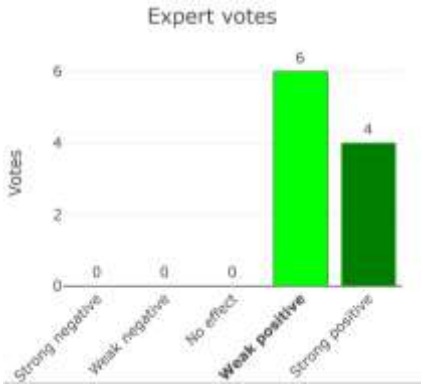


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.2 Electricity generated from wind energy

As energy production is one of the main drivers of greenhouse gas production, renewable energy sources are an important aspect of any climate ambition. Consequently, fostering renewable energy sources such as wind energy are at the centre of many action plans, and regions that show good potential for wind energy are expected to benefit. The result of the experts' voting was therefore unambiguous: all experts expected a positive effect (four strong, six weak).

Figure 7: Result of the expert judgement: regions in terms of the electricity generated from wind energy and the impact of the climate targets

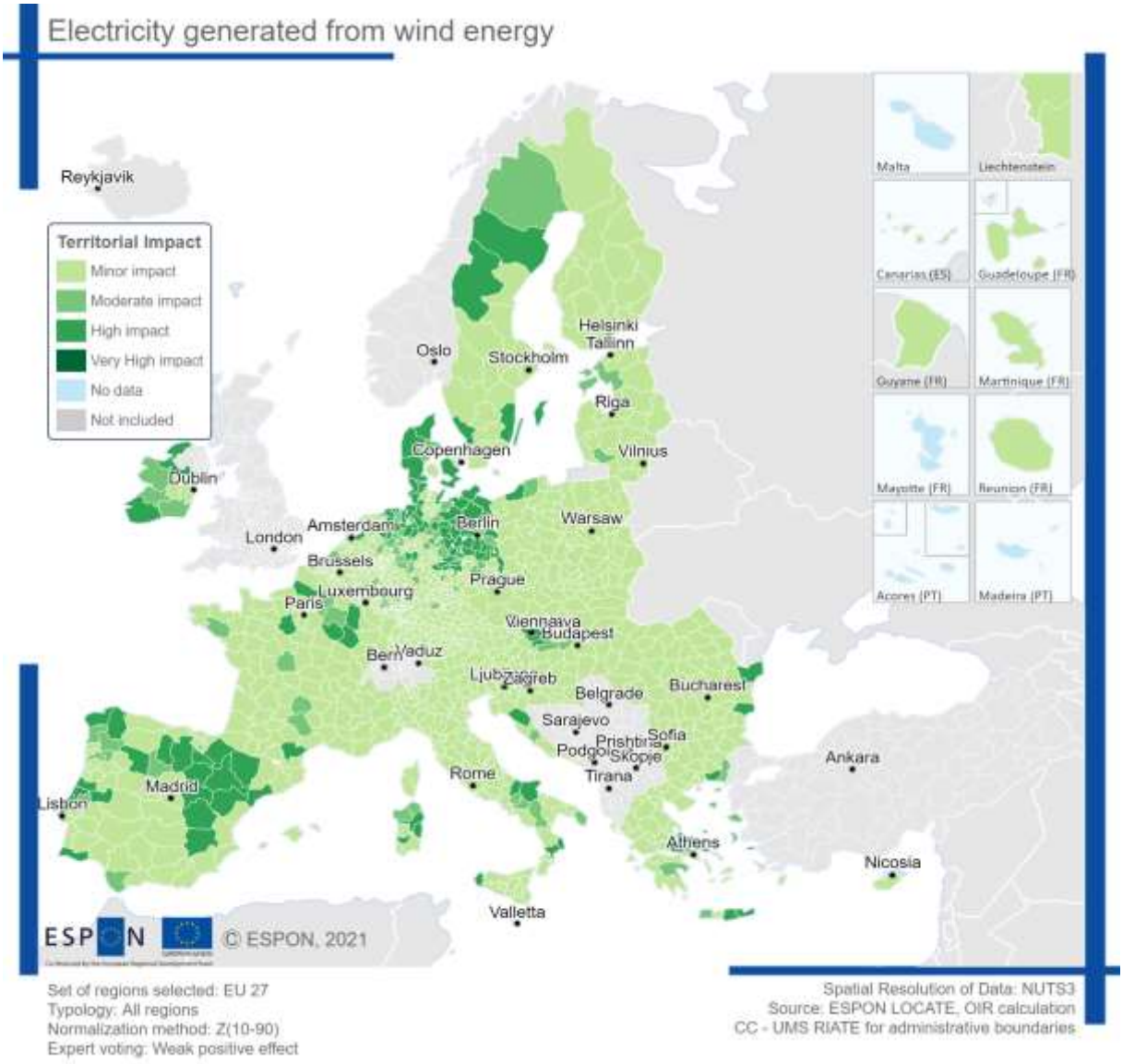


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator depicts electric power generation by onshore wind measured in MWh per capita (reference year: 2012). It has been calculated ad hoc based on the data from ESPON LOCATE and Eurostat (population data). Regions with a higher electric power generation by wind are expected to be more seriously affected by the climate targets. Sensitivity is thus directly proportional to the electric power generation by wind.

The following map shows the potential territorial impact of the climate targets in terms of the regional electricity generated from wind energy. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. The affected regions show a strong regional concentration, which is unsurprising, as wind energy production potential is closely linked to geographical features of territories. 11% of regions could see a highly positive impact. Most of these regions are located in Portugal, Spain, northern Germany and Denmark. Other regions also facing the highest impact are scattered across the rest of the EU countries. 6% of regions would see a moderately positive impact, with most of them situated in the neighbourhood of areas having the highest impact. The vast majority would see a minor positive impact.

Map 5: regions in terms of the electricity generated from wind energy and the impact of the climate targets – expert judgement: weak positive effect

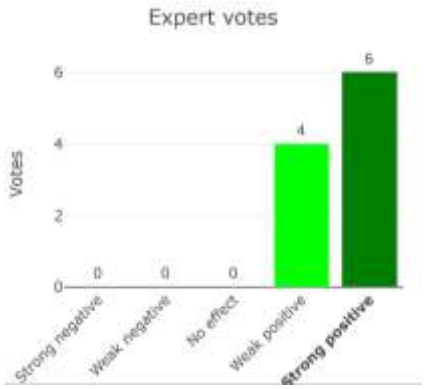


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.3 Electricity generated from solar energy

Similar to wind energy, solar energy production is an important aspect of meeting climate targets in the energy sector. Solar energy is one of the most well-established sources of renewable energy and is in widespread use across the EU territory. In the case of solar energy, Copernicus satellites facilitate the mapping of available solar radiation by monitoring the spatially and temporally variable clouds and aerosols that impact it. Copernicus and Earth observation data provide a uniform system by which big data volumes are fed into a range of information services to evaluate potential in this sector. Nevertheless, higher shares are not always an indication of high overall potential for solar energy production, but are often also a question of funding and support schemes. Nevertheless, regions that already have a higher share of solar energy in the energy mix are expected to be worse affected. Similar to the result of the last indicator, all experts saw a positive effect (six strong, four weak)

Figure 8: Result of the expert judgement: regions in terms of the electricity generated from solar energy and the impact of the climate targets

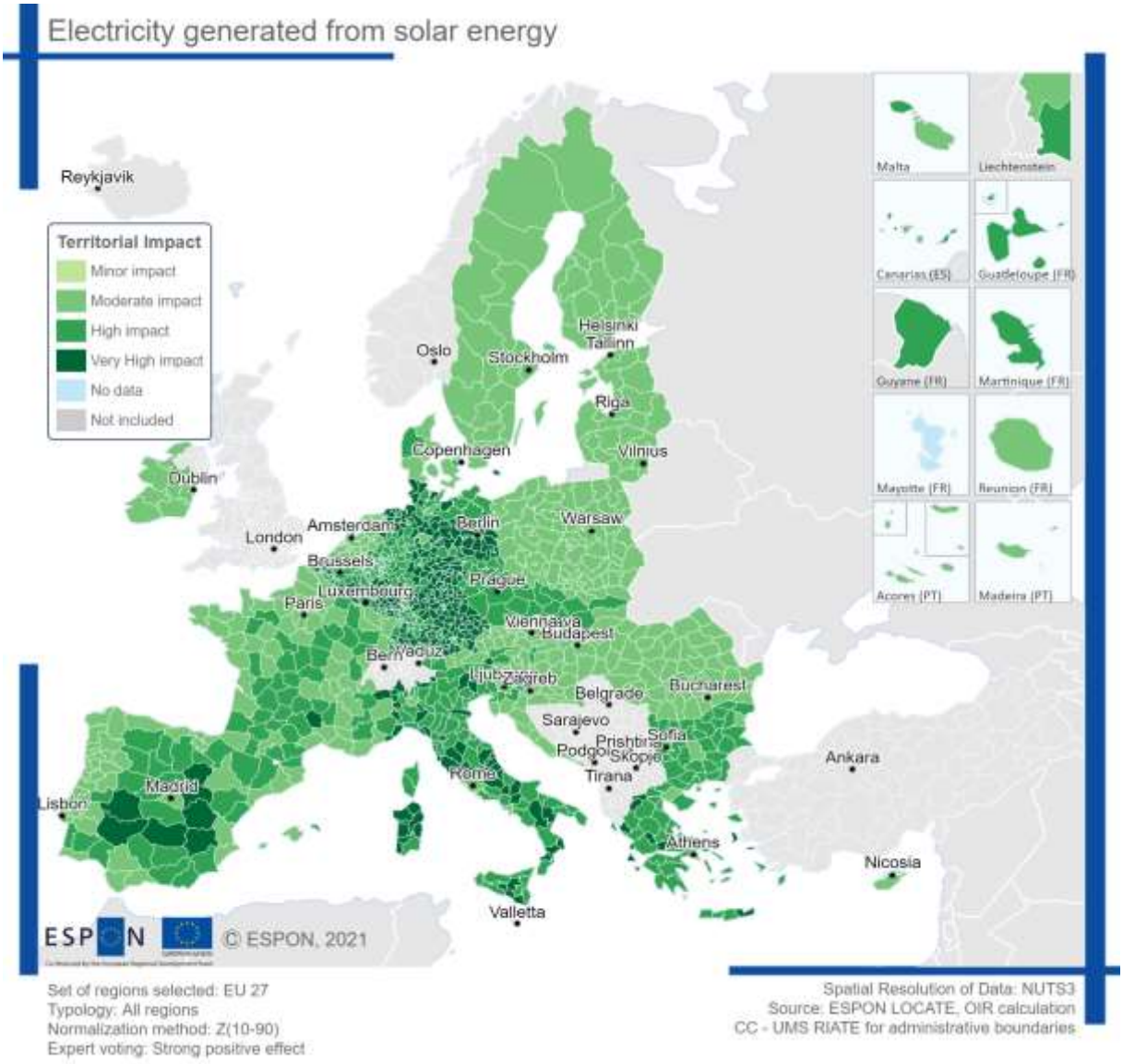


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

This indicator shows electricity generation by solar photovoltaics measured in MWh per capita (reference year: 2012) It has been calculated ad hoc based on data from ESPON LOCATE and Eurostat (population data). Regions with higher electricity generation from this renewable energy source are expected to be worse affected by the climate targets. Sensitivity is thus directly proportional to electricity generation by solar photovoltaics.

The following map shows the potential territorial impact of the climate targets in terms of the regional electricity generated from solar energy. It combines the expert judgement of a strong positive effect with the given sensitivity of regions. 31% of the regions could see a highly positive impact. The majority of these regions are located in Spain, Italy, Greece and Germany. Another 33% of the regions would still see a highly positive impact. Apart from the Member States mentioned before, these regions can be also found in France, Belgium and Austria. 36% of the regions would see a minor positive impact. Compared to wind energy, the potential regional impacts are less geographically concentrated for this indicator.

Map 6: regions in terms of the electricity generated from solar energy and the impact of the climate targets – expert judgement: strong positive effect

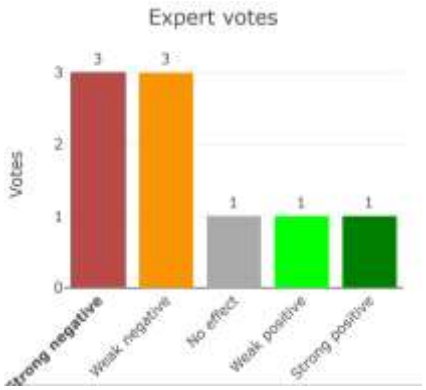


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.4 Electricity generated from hard coal and lignite

Efforts to reduce greenhouse gas emissions in the energy sector often foster the use of renewable energy while reducing dependency on combustion power plants, in particular coal plants, which still have a high share of energy production in many EU countries. This transition thus affects regions that have a high share of energy from those sources, and often also have higher shares of employment in such plants and related mines than regions that are not dependent on those sources. Therefore, most experts saw a negative effect (three strong, three weak). On the other hand, one expert voted for strong positive and also one voted for a weak positive. One expert deemed that there is no relevant effect.

Figure 9: Result of the expert judgement: regions in terms of the electricity generated from hard coal and lignite and the impact of the climate targets

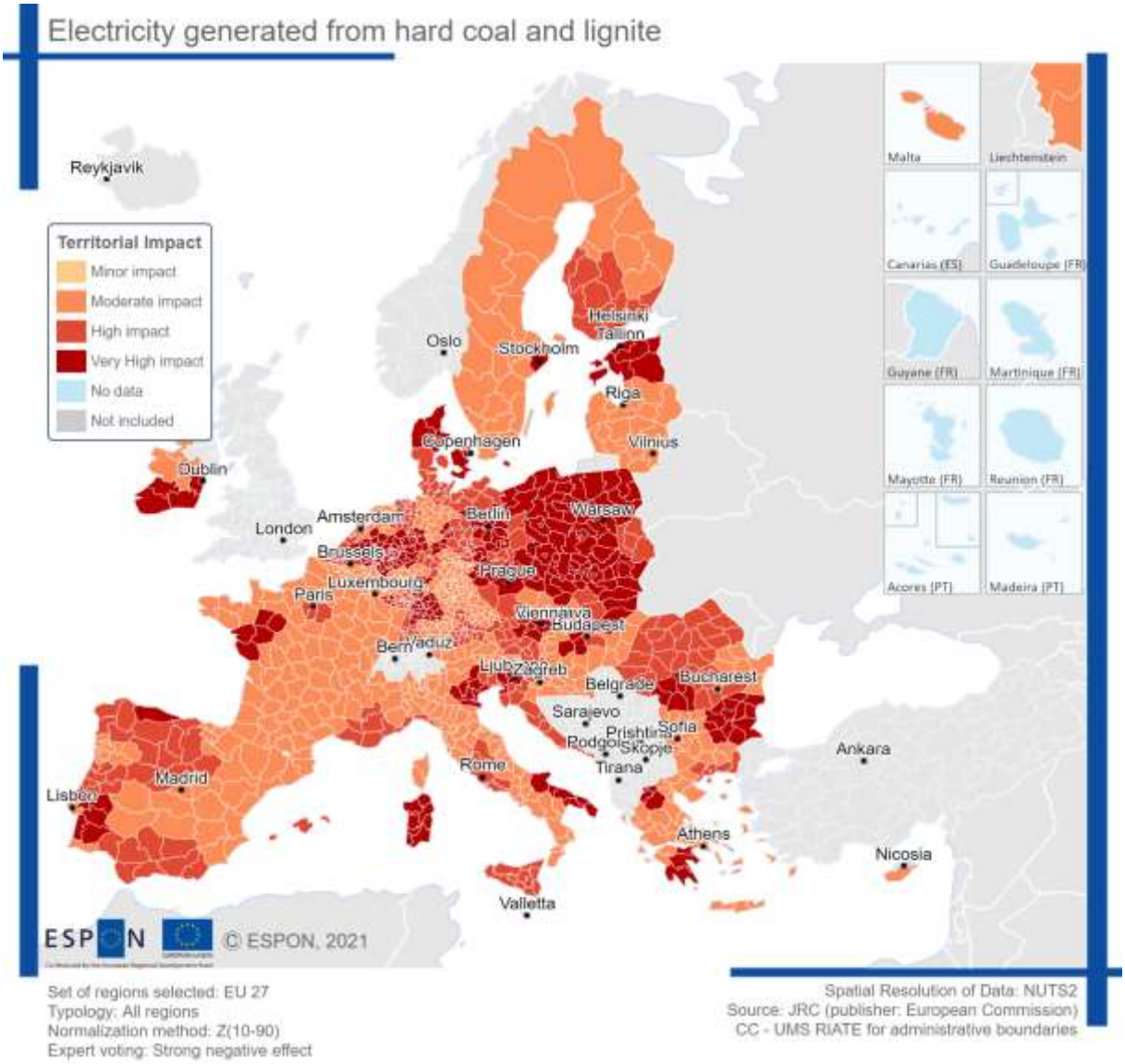


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator shows the share of electricity generated from hard coal and lignite in terms of total electricity generated (reference year: 2015). Regions with a higher share of electricity generated from these energy sources are expected to be worse affected by the climate targets. Sensitivity is thus directly proportional to the share of electricity generated from hard coal and lignite.

The following map shows the potential territorial impact of the climate targets in terms of the regional share of electricity generated from hard coal and lignite. It combines the expert judgement of a strong negative effect with the given sensitivity of regions. 28% of the regions would face a highly negative impact. Estonia, Poland and the Czech Republic are particularly negatively affected. Other countries such as Denmark, Ireland, Germany, Portugal, Italy, Austria, Hungary, Romania, Bulgaria and Greece, would see the highest negative impact only at regional level. 27% of regions are expected to see a highly negative impact. Most of these regions are located on the Iberian Peninsula and in France, Italy, Germany, Austria, Finland, Poland, the Czech Republic, Hungary, Croatia and Bulgaria. 45% of regions would see a moderately negative impact.

Map 7: regions in terms of the electricity generated from hard coal and lignite and the impact of the climate targets – expert judgement: strong negative effect

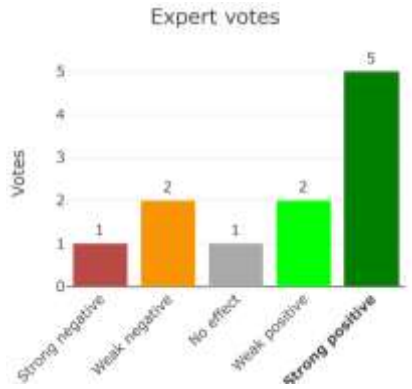


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.5 Urban population exposed to PM10 concentrations

One of the climate targets is to reduce emissions by at least 55% by 2030. In order to reach this objective, energy-efficient measures will be promoted and the consumption of fossil energy sources will be reduced. This will also lead to a decrease in PM10 concentrations, as the burning of fossil fuels is one of the major sources of this problem. Additional measures, such as rebuilding and greening urban neighbourhoods, especially when introducing clean air corridors, can reduce the effective population exposed even further. Most of the experts saw a positive effect (five strong, two weak). However, three experts assessed this effect as negative (one weak, two strong.) One expert did not see a relevant effect.

Figure 10: Result of the expert judgement: urban population exposed to PM10 concentrations affected by the climate targets

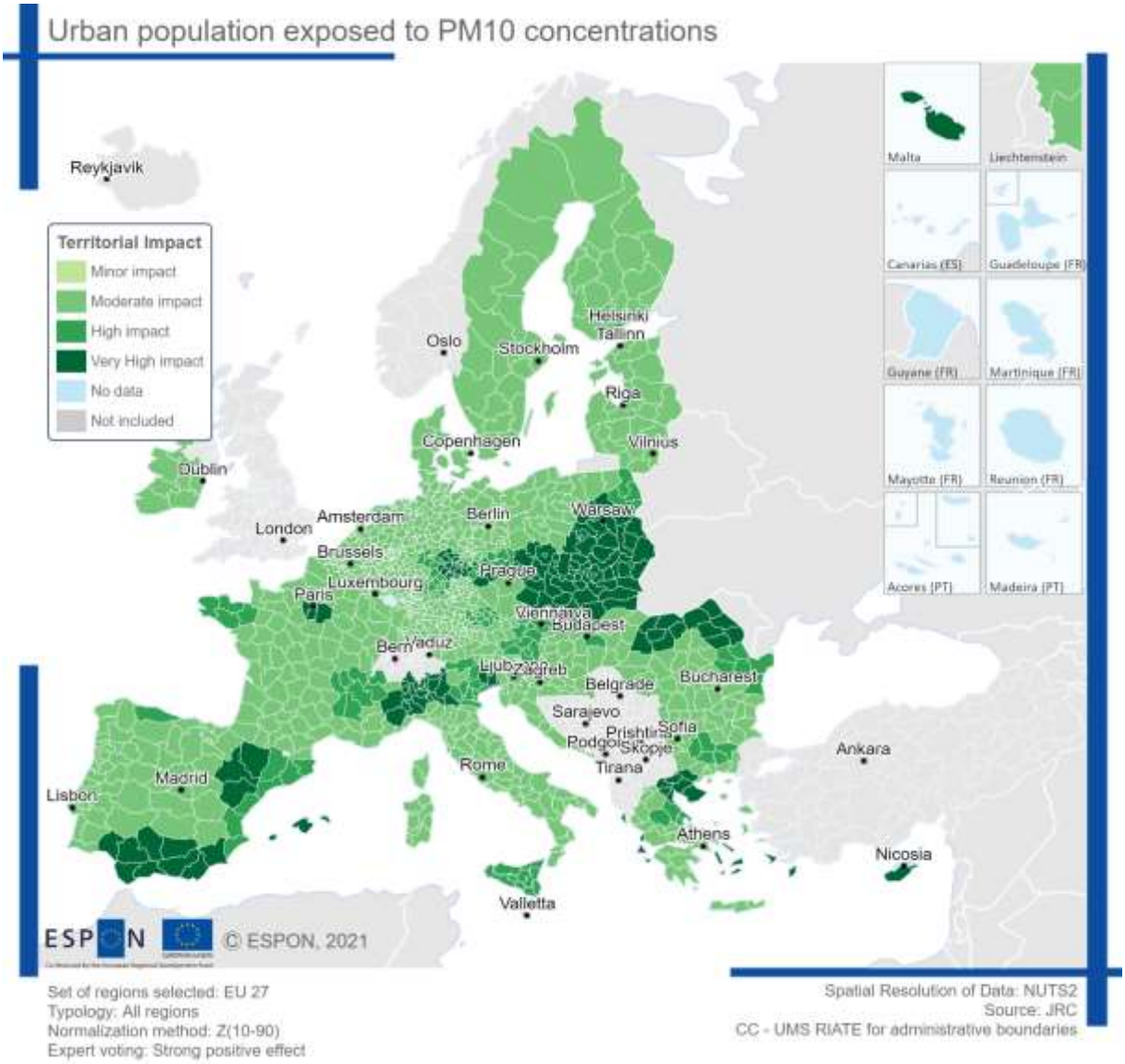


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

This indicator depicts the percentage of urban population exposed to PM10 concentrations exceeding the daily limit value (50 µg/m3) on more than 35 days in a year (reference year: 2020). Regions with a higher percentage of this population group are expected to be affected more seriously by the climate targets. Sensitivity is thus directly proportional to the share of the urban population exposed to PM10 concentrations.

The following map shows the potential territorial impact of the climate targets in terms of the regional population exposed to PM10 concentrations. It combines the experts' judgement of a strong positive effect with the given sensitivity of regions. 14% of the regions could see a very highly positive impact. These regions are located in Spain, the metropolitan region of Paris, the North of Italy, Germany, Greece, Cyprus and Romania. A larger cluster of regions seeing the highest impact can be detected in the area covering Poland, the Czech Republic and Slovakia. 10% of the regions are expected to see a high positive impact. 76% of regions would see a moderately positive impact. It has to be taken into account however, that many of those regions are located in more rural areas and are thus not expected to have as high a share of the population exposed to PM10 as in urban areas.

Map 8: urban population exposed to PM10 concentrations affected by the climate targets – expert judgement: strong positive effect

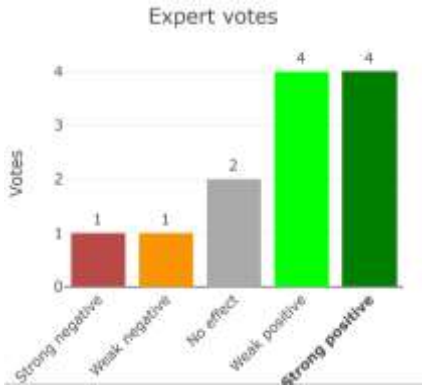


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.6 Emissions of NOx per capita (kilotonnes)

Transport, as the largest source of NOx emissions, is one of the main sectors addressed by the climate targets. The experts therefore agreed that the climate targets could have an impact on NOx emissions. Again, the majority of the experts deemed that climate-friendly measures will achieve a reduction of this pollutant and therefore voted for positive (four strong, four weak) effects. On the other hand, two experts saw the opposite effect and voted for negative effects (one strong, one weak), arguing that regions with high emissions of NOx are likely road-traffic-dependent and would see negative effects in measures for NOx production. Two experts did not see this indicator as relevant.

Figure 11: Result of the expert judgement: emissions of NOx per capita (kilotonnes) affected by the climate targets

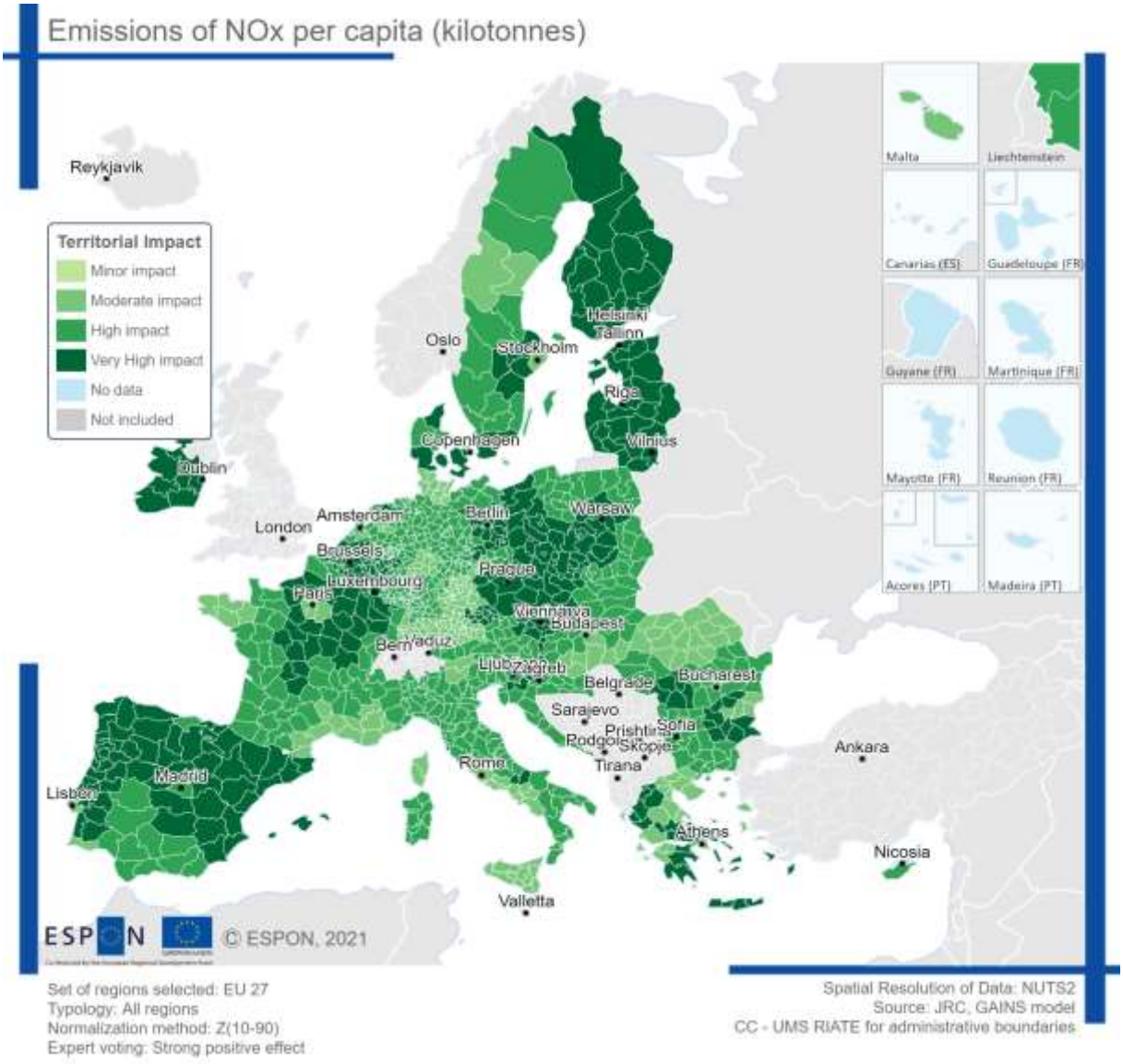


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

This indicator measures the yearly NOx (Nitrogen oxides) emissions in kilotonnes per capita (reference year: 2020). Regions with a higher amount of NOx emissions are likely to be affected more by the climate targets. Sensitivity is thus directly proportional to the NOx emissions.

The following map shows the potential territorial impact of the climate targets on the emissions of NOx per capita (kilotonnes). It combines the expert judgement of a strong positive effect with the given sensitivity of regions. Almost a third (31%) of the regions would potentially see a very highly positive impact. These regions are distributed fairly even throughout Europe, although several countries in particular would be affected positively. Half of the regions (49%) would still experience a highly positive impact and 21% a minor positive impact. A striking pattern is the impacts in urban (especially capital) regions, while the surrounding suburban regions show a very high or high impact.

Map 9: emissions of NOx per capita (kilotonnes) affected by the climate targets – expert judgement: strong positive effect

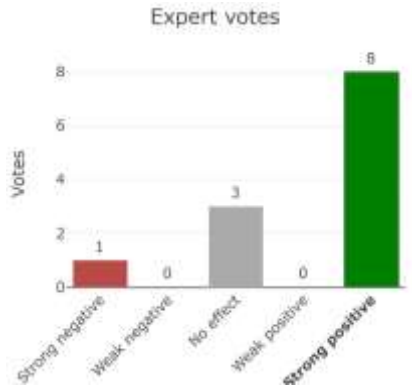


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.7 Emissions of CO2 per capita (tonnes)

The European climate targets will support environmentally-friendly ways of production with lower consumption of fossil energy sources. Consequently, they will contribute to reduce the emission of CO2 per capita. The majority of the experts voted for positive (eight strong), meaning that the climate targets would reduce emissions of this pollutant. However, one expert saw a negative effect and three experts did not consider this indicator to be relevant.

Figure 12: Result of the expert judgement: emissions of CO2 per capita (tonnes) affected by the climate targets

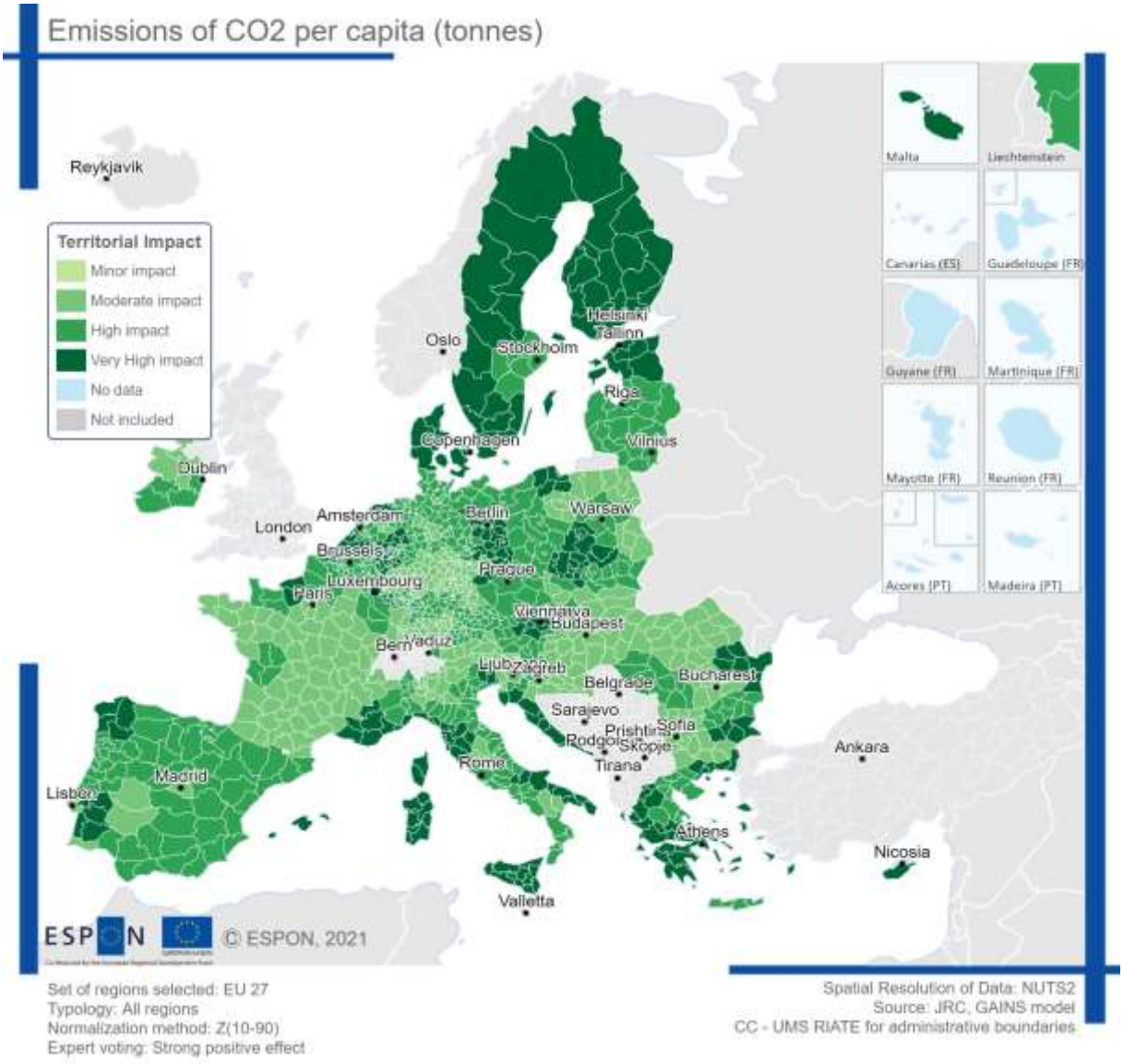


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator pictures the sensitivity of a region according to the yearly emissions of CO2 in tonnes per capita. Regions showing higher concentrations of CO2 per capita are expected to be more sensitive. Sensitivity is thus directly proportional to the emissions of CO2 per capita.

The following map shows the potential territorial impact of the climate targets on employment in agriculture, forestry and fishing. It combines the experts' judgement of a strong positive effect with the given sensitivity of regions. 26% of the regions could benefit from a very highly positive impact. 42% would see a highly positive impact and 32% a moderately positive impact. Many of the regions that would experience the highest impact in terms of reduction of CO2 emissions are port regions or industrial regions. Sparsely populated regions with high CO2 emissions per capita in Sweden and Finland also showed high impacts due to the low numbers of inhabitants, resulting in a high level of CO2 per capita.

Map 10: emissions of CO2 per capita (tonnes) affected by the climate targets – expert judgement: strong positive effect

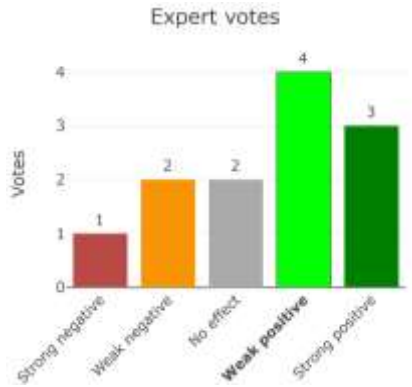


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.8 Probability of forest fire hazard

As many types of natural disaster have increased due to rising CO2 levels in the atmosphere, the measures to achieve the climate targets would contribute to mitigate natural disaster risks in the regions. Most of the experts agreed that the effect of the measures could lead to a decrease in forest fire risk, in particular. Consequently, they voted for positive (three strong, four weak). However, some experts assessed this effect as negative (one strong, two weak). Two experts did not anticipate any influences of the climate targets on forest fire hazard.

Figure 13: Result of the expert judgement: probability of forest fire hazard affected by the climate targets

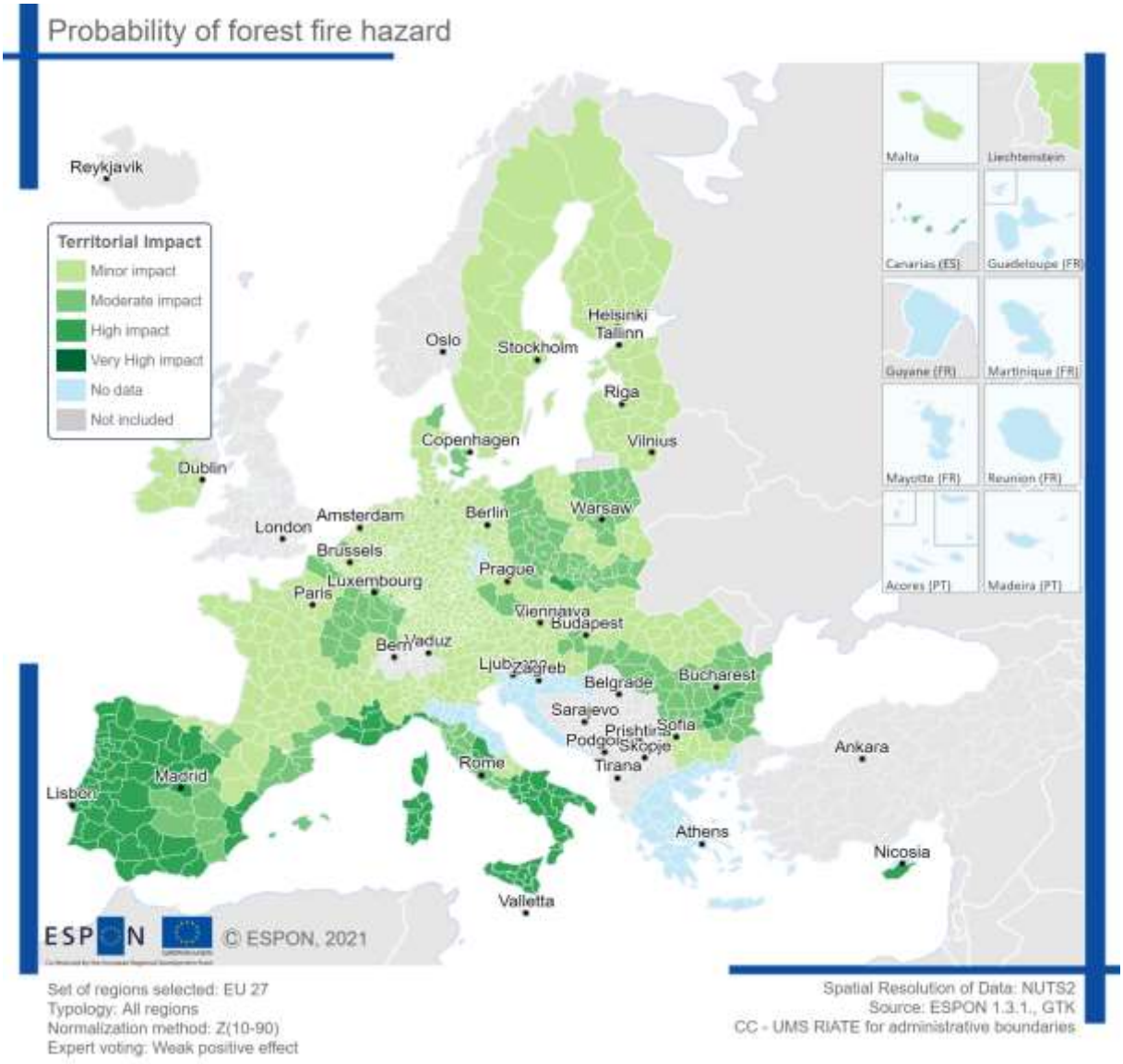


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The sensitivity of a region according to the probability of forest fire hazard is indicated on a scale from 1 (= very low) to 5 (= very high). The reference years are 1997-2003. Regions showing a higher probability of forest fire hazard are expected to be more sensitive to measures addressing this phenomenon. Sensitivity is thus directly proportional to the probability of forest fire hazard

The following map shows the potential territorial impact of the measures related to climate targets based on the probability of forest fire hazard. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. 10% of regions see a highly positive impact. These regions are concentrated in southern Europe (Italy, the Iberian Peninsula, the French Mediterranean coast), Eastern Europe (Czech Republic, Bulgaria) as well as in Cyprus. 17% of regions would see a moderately positive impact and 73% a minor positive impact.

Map 11: probability of forest fire hazard affected by the climate targets – expert judgement: weak positive effect

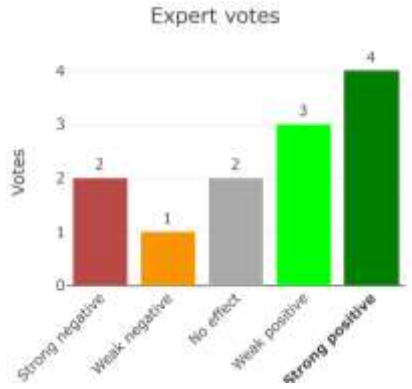


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.9 Sensitivity to floods

Similarly to forest fires, the majority of the experts concluded that the climate target would also have an impact on floods in the regions.[8] Most of the experts expected that the climate measures could reduce flooding frequency and therefore voted for positive (four strong, three weak). On the other hand, three experts expected an even higher probability of flooding events and consequently voted for negative (two strong, one weak). Two experts did not expect any effects.

Figure 14: Result of the expert judgement: sensitivity to floods affected by the climate targets



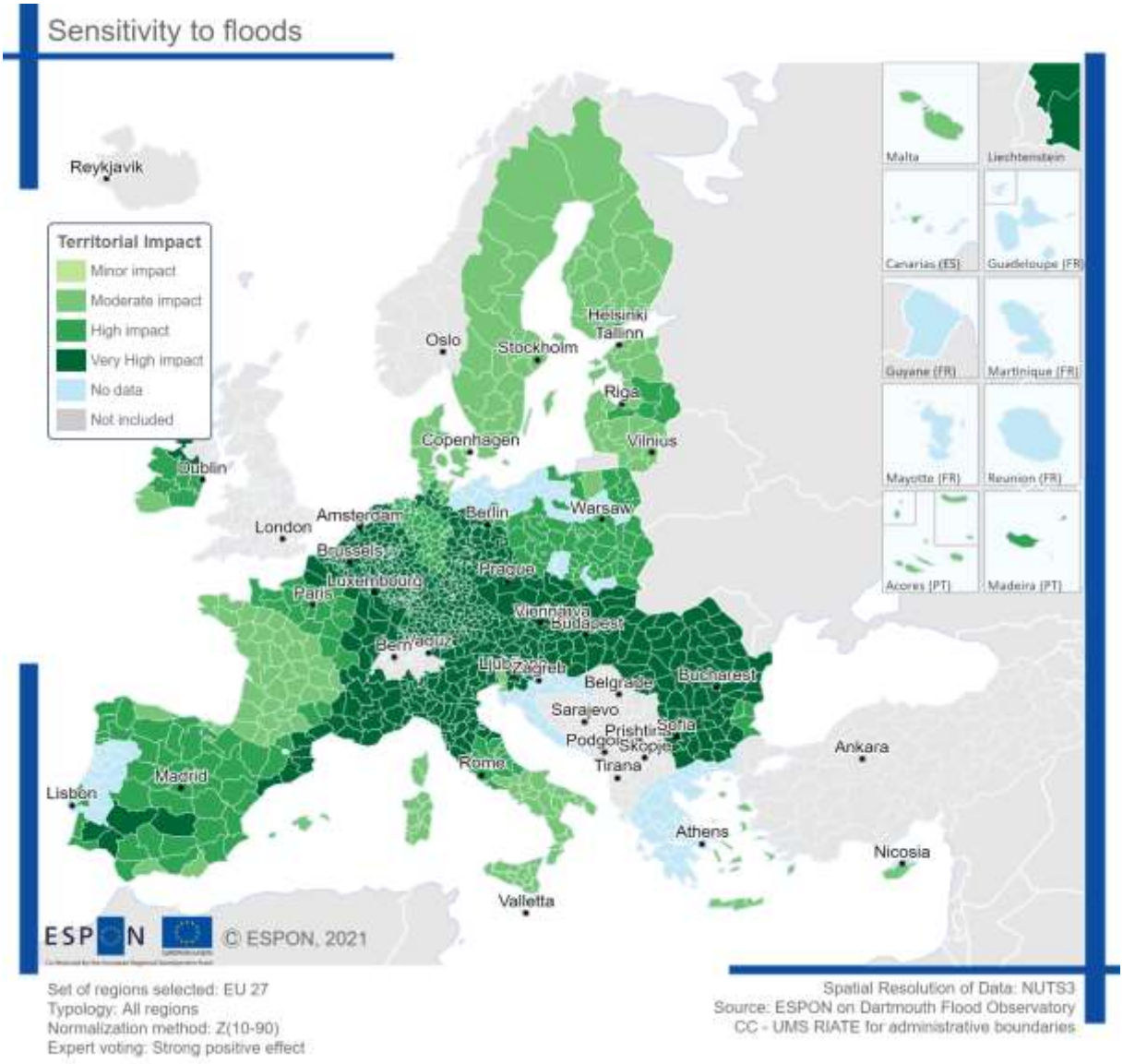
Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The sensitivity of a region to floods is expressed as the spatial likelihood of floods occurring (reference year: 2012). It is indicated on a scale from 1 (= very low) to 5 (= very high). Regions showing higher flood risk are expected to be more sensitive to measures to reduce the likelihood of floods. Sensitivity is thus directly proportional to the likelihood of floods occurring.

The following map shows the potential territorial impact of the climate targets on the sensitivity to floods. It combines the expert judgement of a strong positive effect with the given sensitivity of regions. 61% of regions would see a highly positive impact. Regions where there is a high risk of flooding, e.g. in the Alps, the Danube basin, the Rhine basin or the Elbe basin, would benefit most. 21% of regions could still see a highly positive impact and 18% a moderately positive impact.

[8] The European Flood Awareness Systems (EFAS) and Global Flood Awareness Systems (GloFAS) provide complementary flood forecast information to relevant stakeholders that support flood risk management at the national, regional and global level (https://www.efas.eu/).

Map 12: sensitivity to floods affected by the climate targets – expert judgement: strong positive effect

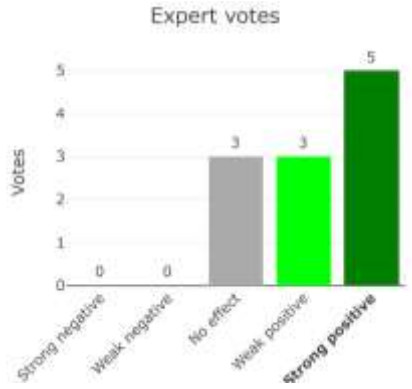


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.10 Soil retention

One of the important factors in preventing flooding is sufficient soil retention capacity. To achieve the climate targets, changes in land-use policy are expected by the experts, which would likely result in unsealing and improving soil functions. A direct effect of such changes would be an increase in soil retention capacity. Most of the experts agreed that the measures related to the climate targets could have a positive impact on it (five strong, three weak). Three experts did not see a relevant effect.

Figure 15: Result of the expert judgement: soil retention affected by the climate targets

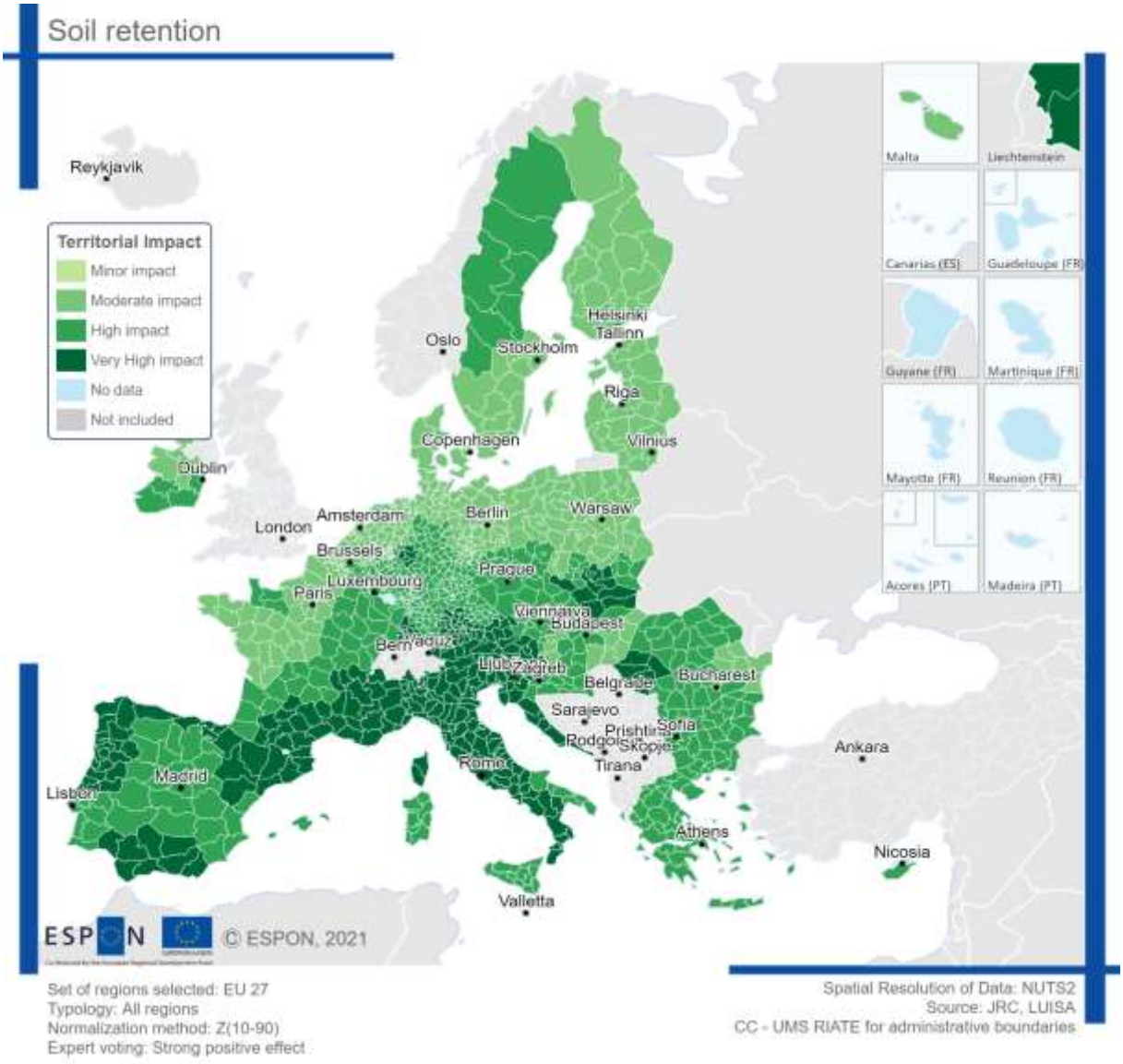


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

Soil retention is calculated as soil loss without vegetation cover minus soil loss including the current land-use/cover pattern (reference year: 2020). Specifically, this indicator takes into account climate data (observed measurements for rainfall and modelled for snow), topographic aspects, soil properties and whether or not vegetation cover is present. Regions showing higher soil loss are expected to be more sensitive to the climate targets. Sensitivity is thus directly proportional to soil loss.

The following map shows the potential territorial impact of the climate targets on soil retention. It combines the expert judgement of a strong positive effect with the given sensitivity of regions. 24% of regions could see a very highly positive impact. The majority of these are Mediterranean regions and on the Iberian Peninsula. Other regions facing the greatest potential impact are located in Germany, Austria, Poland, the Czech Republic and Romania. 45% of regions would still see a highly positive impact and 31% a moderately positive impact.

Map 13: soil retention affected by the climate targets – expert judgement: strong positive effect

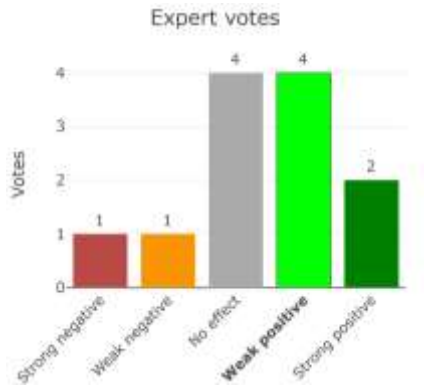


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

5.11 Water consumption

It is expected that the climate targets and related measures would foster the reuse of water and consequently reduce overall water consumption. Therefore, the experts agreed that regions with higher water consumption could be affected the most. Most of the experts judged the effect to be positive (two strong, four weak). On the other hand, two experts voted negative (one strong, one weak). Four experts did not expect a relevant effect.

Figure 16: Result of the expert judgement: water consumption affected by the climate targets

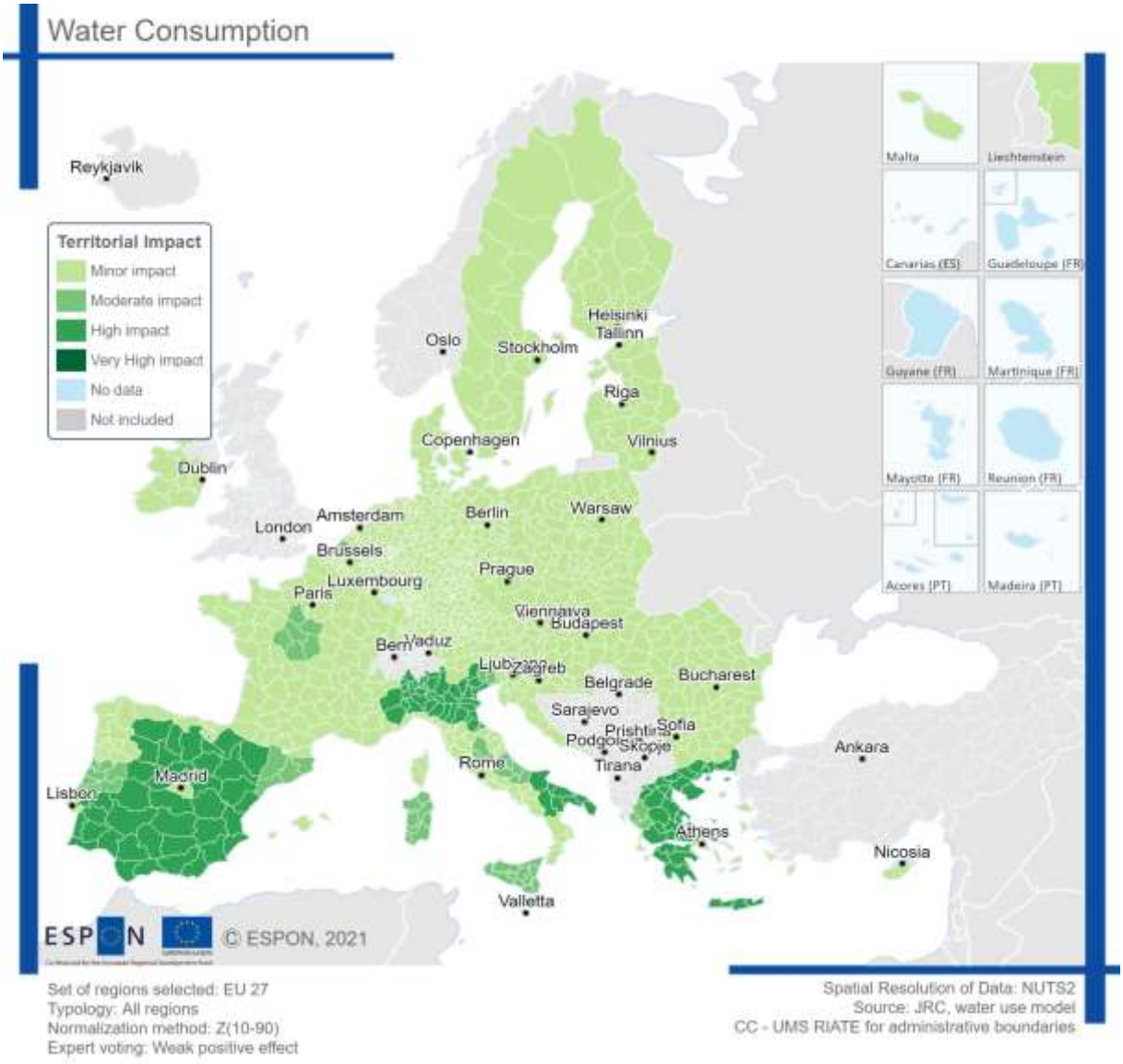


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

The indicator "water consumption" depicts the sensitivity of a region according to daily freshwater consumption in litres per capita (reference year: 2020). Regions showing higher freshwater consumption per capita are expected to benefit more from the climate targets. Sensitivity is thus directly proportional to water consumption.

The following map shows the potential territorial impact of the climate targets on water consumption. It combines the expert judgement of a weak positive effect with the given sensitivity of regions. 10% of regions are expected to see a highly positive impact. These regions are located mostly in areas with warm climatic conditions (Portugal, Spain, Italy, Greece), where water consumption is particularly high. 5% of regions would see a moderately positive impact and the majority (85%) only a minor positive impact.

Map 14: water consumption affected by the climate targets – expert judgement: weak positive effect



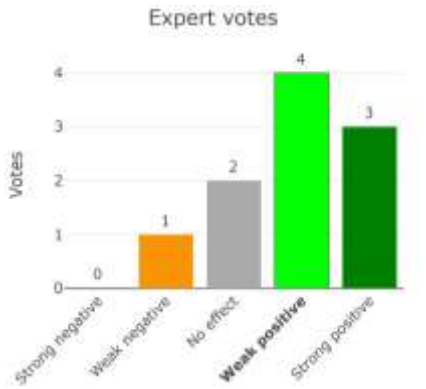
Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

6 Expected societal effects

6.1 Life expectancy at birth

Life expectancy as a statistical measurement is (among other factors) determined to a significant extent by the risk of the population of dying prematurely. Measures in relation to the climate targets would reduce days of extreme heat and 'tropical' nights where the temperature does not drop below 25°C. Furthermore, measures to reduce greenhouse gas emissions are also likely to decrease air pollution from transport and industry. The measures would thus have a positive impact on health and life expectancy in this context. Most of the experts judged there would be a positive effect (three strong, four weak). One expert voted for a weak negative, and two did not see a relevant effect.

Figure 17: Result of the expert judgement: life expectancy at birth affected by the climate targets

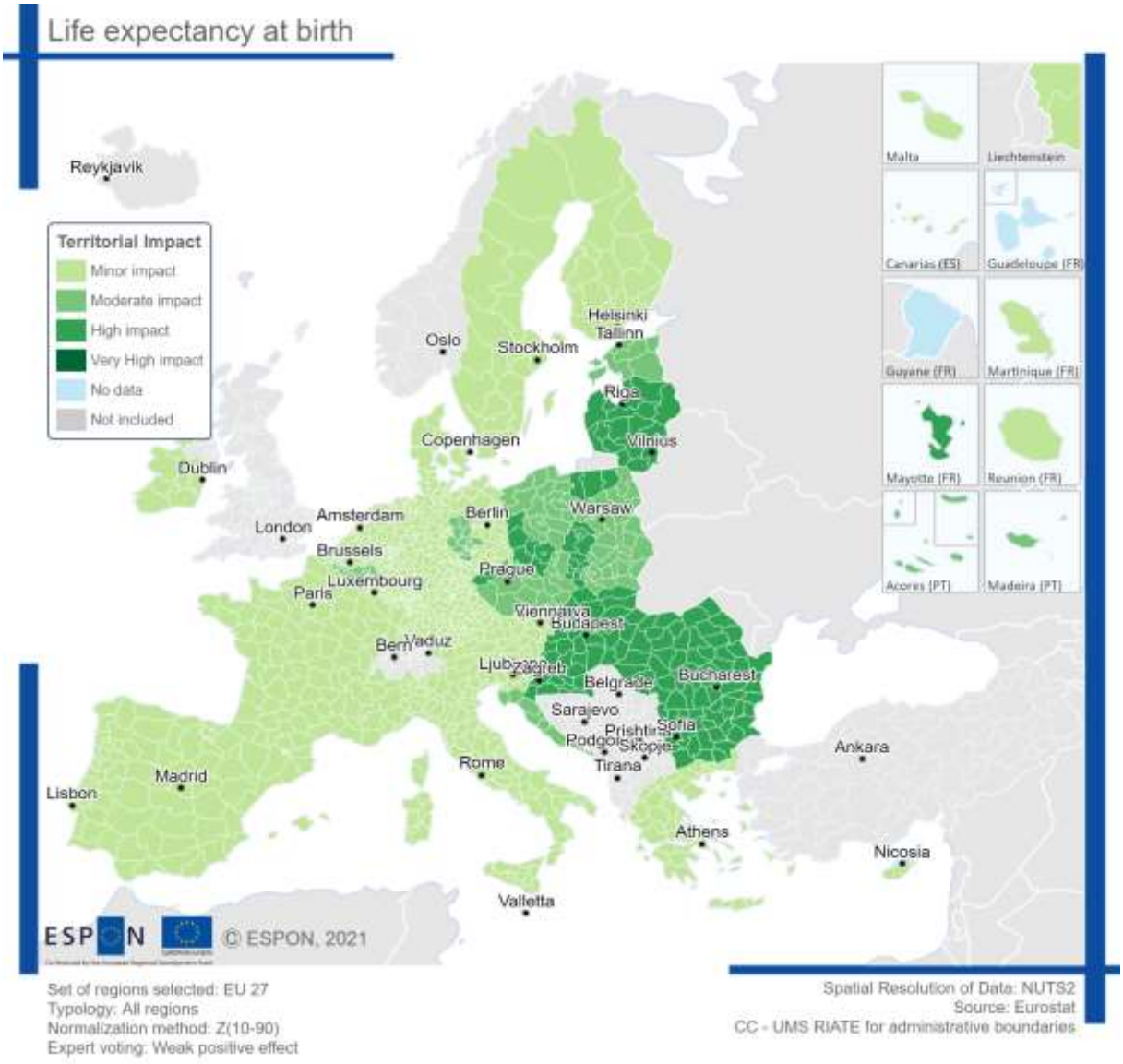


Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

This indicator depicts the life expectancy at an exact given age (reference year: 2015). Regions in which life expectancy is lower are assumed to benefit more from the measures of the climate targets. Sensitivity is thus inversely proportional to life expectancy at birth.

The following map shows the potential territorial impact of the climate targets on life expectancy at birth. It combines the experts' judgement of a weak positive effect with the given sensitivity of regions. 13% of the regions would see a highly positive impact and 9% a moderately positive impact. The majority of these regions can be found in Eastern Europe. A few regions with a moderate positive impact are located in southern Belgium and in the eastern part of Germany. 78% of regions covering mainly central, southern and northern Europe are expected to have a minor positive impact.

Map 15: life expectancy at birth affected by the climate targets – expert judgement: moderately positive effect



Source: Territorial impact assessment expert workshop, 25 & 26 February 2021

7 Conclusions and policy recommendations

7.1 Winning and losing regions are not the same

Analysing the data leads to the conclusion that there are patterns that characterise winning and losing regions, and that often the differences are stark. Namely, regions with a high dependency on coal, for example, face a major challenge in terms of reconverting their economies and their energy sources to reach the climate targets.

On the other hand, those regions that are already exploiting wind and solar energies could benefit more from these transformations. As first-comers, they face fewer investment requirements to reconvert their energy systems.

Southern European regions nevertheless, and regardless of their status in terms of producing and using renewable energies, would be among those to benefit the most from proactively addressing the consequences of climate change and global warming. The fact that these are often, however, regions with lower investment capacity than the European average (due both to their lower GDP and their higher public and private debts), is in itself an additional challenge.

Many regions risk being left alone in the adaptation process, making it harder for them, at European level, to achieve the climate targets.

- Overall, and given that there are gaps in terms of winning and losing regions, and of regions with investment capacity and regions without it, policies need to be adjusted to address these differences. These differences need to be addressed in the five priorities of the European structural and investment funds (research and innovation, digital technologies, a low-carbon economy, the sustainable management of natural resources and small businesses).

7.2 Distributing know-how and funding among relevant actors

Experts expressed the opinion that the flow of information to actors on the ground is not optimal. This is true for both local and regional authorities and for economic actors, such as farmers and small and medium-sized enterprises. Access to European funding to support climate actions is dependent on awareness of the existing financing tools and knowledge of how to navigate the administrative requirements and follow the adequate procedures. Small organisations, SMEs, or medium-sized and small municipalities are thus disadvantaged in this area. Even when such actors are aware of the existence of certain support measures, consulting firms that know how to apply for European grants are de facto gate-keepers. Their management fees eat into the final budgets of such projects.

- Better advisory tools must be put in place to address the knowledge gaps of actors that are crucial to implement climate-relevant actions but which lack the administrative capacity and know-how regarding the available resources. Peer-to-peer learning (in small-scale, people-to-people projects, for example) can also play a role in the spread of such knowledge.

7.3 Multilevel governance determines failure and success in climate actions

Connected to the previous point is the fact that local and regional authorities need to be empowered. The imbalances at European level are significant and mostly coincide with weak multilevel governance. The more highly centralised a state is, the less knowledge, administrative capacity and financing availability is present at local and regional level. This means that countries with strong LRAs have more leverage in accessing European funds, implementing relevant projects, and doing it successfully. This will enable LRAs to access funding

- Standards and requirements in ESI funds need to take into account the different capabilities of potential implementing actors, striving to simplify requirements whenever possible. This is especially true for countries with weak multilevel governance.

7.4 In conclusion

Reaching the climate targets will largely depend on a stable policy framework that gives clear signals enabling the relevant actors to steer their economic and policy actions. Furthermore,

- there must be a stronger focus on linking climate goals to the actors that can implement them on the ground – LRAs, entrepreneurs and SMEs;
- EU R&D policies (such as Horizon Europe) can be expected to play a major role in jointly promoting European industrial competitiveness and in achieving the climate targets;
- standards for funding opportunities need to be clear, and information must be easily accessible;
- regional imbalances need to be taken into account in policy design and implementation, in terms of threats (such as reconversion of the energy market), opportunities (such as the intrinsic benefits of tackling climate change – and also in terms of the opportunities for regions already doing well in greening their economies) and investment capacities.

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European Committee of the Regions

Created in 1994, after the entry into force of the Maastricht Treaty, the European Committee of the Regions is the EU's assembly of 329 regional and local representatives from all 27 Member States, representing over 447 million Europeans.

Its main objectives are to involve regional and local authorities and the communities they represent in the EU's decision-making process and to inform them about EU policies. The European Commission, the European Parliament and the Council have to consult the Committee in policy areas affecting regions and cities. It can appeal to the Court of Justice of the European Union as a means of upholding EU law where there are breaches to the subsidiarity principle or failures to respect regional or local authorities.

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