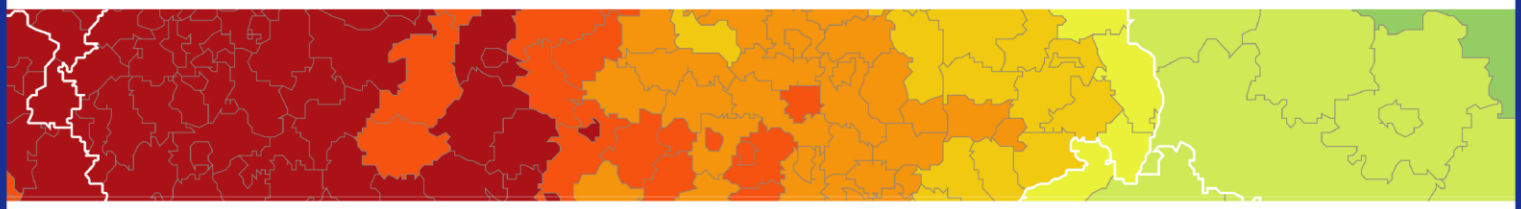

ESPON QoL – Quality of Life Measurements and Methodology

Applied Research

Final Synthesis Report

30th October 2020

Final Report

This applied research activity is conducted within the framework of the ESPON 2020 Cooperation Programme.

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.

This delivery does not necessarily reflect the opinion of the members of the ESPON 2020 Monitoring Committee
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Final Synthesis Report

ESPON QoL – Quality of Life Measurements and Methodology

30th October 2020

Disclaimer:
This document is a final report.

The information contained herein is subject to change and does not commit the ESPON EGTC and the countries participating in the ESPON 2020 Cooperation Programme.

The final version of the report will be published as soon as approved.

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Abbreviations

AG	Advisory Group
ARCGis	Aeronautical Reconnaissance Coverage Geographic Information System.
ART	Articulation of Territorial Networks
AT	Austria
CBC	Cross Border Cooperation
CEO	Chief Executive Officer
CO2	Cytochrome Oxidase 2
CPI	Consumer Price Index
DG	Directorate General
DFR	Draft Final Report
DHB	District Health Board
EC	European Commission
ECE	Electrical and Computer Engineering
ECHP	European Community Household Panel
EEAS	European External Action Service
EFTA	European Free Trade Association
EQLS	European Quality of Life Surveys
ES	Spain
ESPON	European Territorial Observatory Network
ESPON EGTC	ESPON European Grouping of Territorial Cooperation
EU	European Union
EU LFS	EU Labour Force Survey
EU-SILC	EU Statistics on Income and Living Conditions
FP7 ITN	Framework Programme 7 (2007-13) Initial Training Network
FI	Finland
FUA	Functional Urban Area
GDP	Gross Domestic Product
GHS	Global Human Settlements
GNI	Gross National Income
ICT	Information and Communication Technology
IPA	Instrument for Pre-accession Assistance
IT	Italy
JRC	Joint Research Centre
LAU	Local Administrative Unit
LC clustering	Latent Class clustering
LGBT	Lesbian, Gay, Bisexual, Transgender
LU	Luxembourg
MIT	Massachusetts Institute of Technology
NCEA	National Certificate Educational Achievement
NDP	National Development Plan
NEET	Not (engaged) in Education, Employment or Training
NO	Norway
NSI	National Statistical Institutes
NSO	National Statistics Office
NUTS	Nomenclature of Territorial Units for Statistics
OECD	Organization for Economic Co-operation and Development
OLAP	Online Analytical Processing
OS	Official Statistics
PM10	Particulate Matter of 10 Microns in diameter or smaller
PM2.5	Particulate Matter (less than 2.5 microns in diameter)
PST	Project Support Team
QoL	Quality of Life
QoLOBA	Quality of Life Outcomes-Based Accounting
QoP	Quality of the Place
SDG	Sustainable Development Goals
SI	Slovenia
SMEs	Small and Medium Enterprises
SPI	Social Progress Index

TED	Technology, Entertainment and Design
ToR	Terms of Reference
TQoL	Territorial Quality of Life
UK	United Kingdom
UCLG	United Cities and Local Governments
USA	United States of America
UN	United Nations
UNDP	United Nations Development Programme
UN-GGIM	United Nations Committee of Experts on Global Geospatial Information Management
UN-HABITAT	United Nations Human Settlements Programme
UN-HDI	United Nations Human Development Index
UNOPS	United Nations Office for Project Services
UNSCR	United Nations Security Council Resolutions
WBC	Western Balkans Countries

Synthesis Report

“ESPON QoL - Quality of life measurements and methodology” is a project funded by the ESPON 2020 programme, financed by the European Regional Development Fund (ERDF), by EU Member States, Iceland, Liechtenstein, Norway and Switzerland. The study aimed to produce evidence about the challenges, achievements and development trends of European regions and cities in relation to Quality of Life (QoL) as well as to deliver guidance for local, regional and national level policy makers to promote the integration of QoL in the development and implementation of territorial development strategies. So, different policy questions are addressed by the study:

- How does the concept and measurement of QoL differ in meaning at different scales (national, regional, local)? Which are the common measurement domains?
- What are the possible common indicators, which allow a comparative measurement and how can measurement be adjusted to different types of territories?
- By whom and how the selection of the QoL priorities for measurement (domains), indicators and/or weights will be decided and applied in practice? At which level should the discussion and use of weights take place?
- How can citizens and public participation can be considered in the process of selecting indicators and in the definition of QoL for a certain place or territory?

The main outcomes of the applied research are summarised in the next sections of this Synthesis Report.

Territorial Quality of Life measurement model, tools and approach

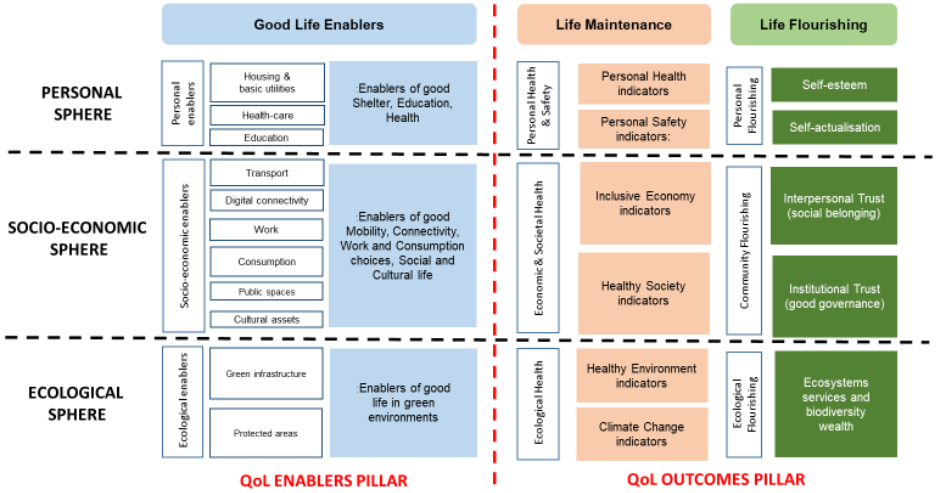
“Territorial” quality of life is the capability of living beings to survive and flourish in a territorial context. Out of this simple definition, we developed two main concepts and streams of applied research activities:

- Content-wise a scientific perspective: **a conceptual model to measure territorial quality of life in all its facets**. The model encompasses three spheres – the personal life sphere, the socio-economic sphere and the ecological sphere – and three quality of life dimensions for measuring – good life enablers, life survival (“maintenance”) and life flourishing. As a result, the conceptual model suggests to gauge territorial quality of life by selecting and measuring appropriate indicators for nine quality of life domains and 22 sub-domains.
- Process-wise a societal and policy perspective: **a deliberative approach engaging citizens, experts and policy makers in co-deciding what, why and how quality of life should be measured to enable good life** – with a “citizen-centric” and place based approach. The term “citizen” is meant in the larger sense of “an inhabitant of a particular place”, which can be in reference to a village, town, city, region, region, country or a whole continent (e.g. Europe) depending on the context (OECD, 2020).

Ideally, the scientific and societal perspectives should be integrated in one coherent whole. The selection and use of indicators to measure the different aspects of territorial quality of life should be supported by a robust reasoning and statistical evidence of its relationship with the QoL aspect that intends to gauge. At the same time it needs to be legitimated with a deliberative process engaging policy makers, stakeholders and the citizens. Only such a comprehensive approach would increase the relevance of the indicators and the acceptance of QoL policies.

The Territorial Quality of Life (TQoL) model is shown in the figure below:

Figure 1 The Territorial Quality of Life measurement framework



The model is applied to identify indicators that measure aspects of the different quality of life domains, delivering a **system for coding QoL indicators** that are applied to assess data availability for a given territorial context,

Territorial QoL indicators can be then elaborated using the available data and the **TQoL dashboard tool.** The latter is an Excel application that enables the comparison of one region at a year of reference with all other regions in Europe, considering also regional typologies like urban-rural. The tool can also be applied to a single territorial context, allowing to monitor over time quality of life trends in a region, city, rural area etc.[1]

The dashboard tool allows to compute single QoL indicators and composite indices, using for the latter weighting options to combine the indicators sensitive to different territorial needs, i.e. for different typologies (e.g. urban, rural, mountain areas etc.) which affect the way of life. Thus, the tool is flexible, avoiding a “one-size-fits-all” approach to the selection and weighting of the QoL indicators, as the nature of quality of life expectations and priorities differs to some extent for different applications, for example for various territorial typologies (e.g. urban-rural typology, mountain areas, islands, metropolitan regions) and/or in specific local circumstances.

The tool is applicable at different territorial levels as well – European, national, regional and local level - depending on data availability: NUTS 2/NUTS 3 data detail for the European level, NUTS 3/LAU data for the national level, LAU data for the regional level, and sub-LAU data at the local level.

In this project, we have applied the TQoL coding system and dashboard tool to elaborate QoL indicators and delivers quality of life maps at European Level in a European wide exercise covering the ESPON space and the Western Balkans Countries (WBC) at NUTS 3 level, as well as at lower territorial levels in several selected case studies. The approach to measuring QoL is the same across different territorial levels, indicators are just used to define them in each case and are tailored based on data availability for each context.

Application at European level

Methodologically, our work builds upon the OECD Handbook on Constructing Composite

[1] The TQoL dashboard tool is described in Annex 2, together with operational guidelines for its use.

Indicators. (OECD JRC 2008). The specific methodology for measuring quality of life at regional level, including weighting for different types of territories, encompasses five steps:

Step 1. Selection of QoL indicators. Pragmatically, in order to build an operational and complete composite index, indicators have been selected based on their availability at NUTS 3 level, their completeness and time series availability.

Step 2. Data harmonisation. Carried out to render the variables comparable. Outliers in the dataset are identified and excluded. Highly skewed distributions are transformed (logarithmic and power transformations). Indicators are normalised in a range [0-1].

Step 3. Weighing QoL indicators. Weighting currently occurs through the hierarchical organisation of indicators in three dimensions, nine domains and 22 sub-domains. Dimensions are aggregated with a generalised weighted mean of power of 0.5; variables in domains and sub-domains all weight equal.

Step 4. Indicator testing and validation. To test and validate the indicators, we performed a sensitivity analysis of alternative weights and nesting options, a comparison with consolidated composite indices and other synthetic indicators of well-being (DG REGIO EU-SPI index, Hannel QoL index; Life Expectancy at birth and GDP per capita), an assessment carried out with the ESPON QoL Advisory Group to validate a proposal of indicators based on our own assessment of data availability and partial results at the European level.

Step 5. Indicator analysis and visualisation. The fifth step is organised in an iterative loop with the previous Steps 3 and 4. Analysis and visualisation lead to a new round of validation, and then to a new round of mapping and analysis until results are sufficiently robust.

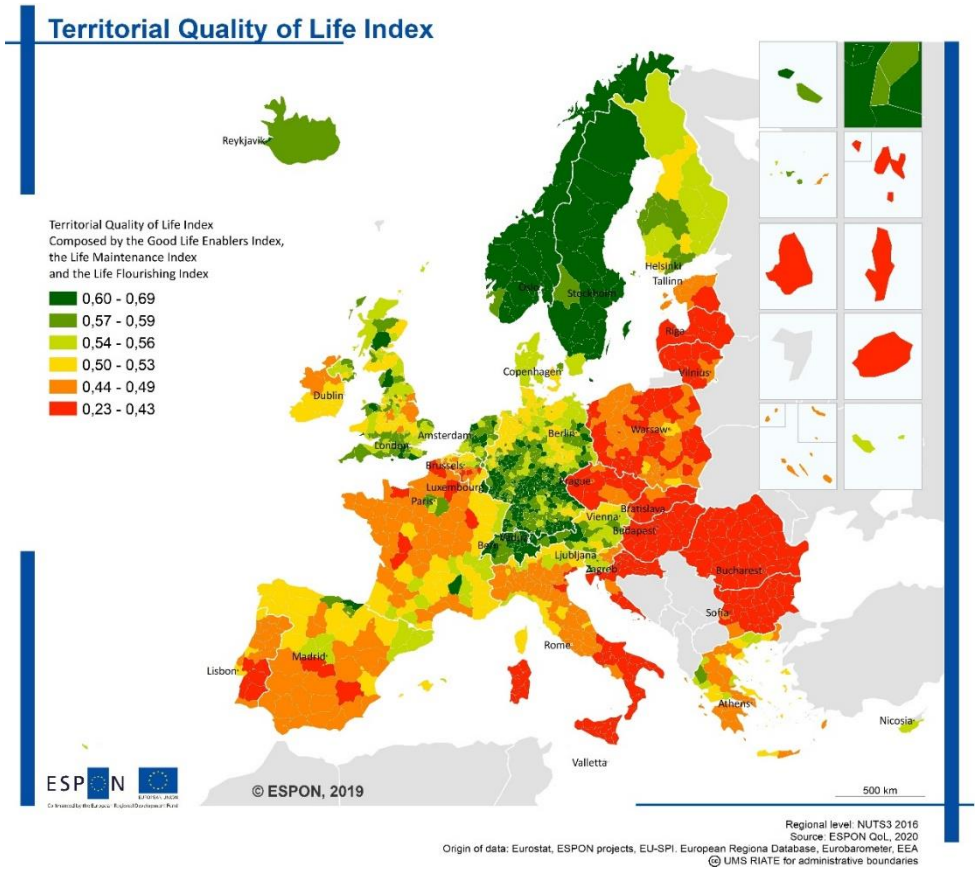
Based on the above criteria, around 50 indicators were selected to inform the different domains and subdomains of the TQoL indicators proposed for the European level (ESPON area; NUTS 3; the full collection of indicators is presented in the Final Report).

Not surprisingly, **the value of the pilot European quality of life maps elaborated to compare NUTS 3 regions was affected by the limited range and in some cases uneven quality of the statistical data available to measure the 22 sub-domains of the TQoL model.** In some cases, it was not possible to select indicators grounded in a solid scientific reasoning and statistical evidence, but only proxies partially related to the aspect that is intended to measure, as for instance the use of “suicide rates” to measure self-esteem, or “extension of abandoned farmland” as an ecological factor. In general, all data related to the ecological sphere are less mature and of an uneven quality if compared to socio-economic indicators grounded in more traditional and well-established international accounting practices. As a result, the European maps – and especially the composite QoL maps – must be interpreted with caution. **Even so, however, the European QoL mapping exercise was very valuable to show the potentiality of the method and, as a by-product, to highlight the consequences of data gaps and stimulate data collection improvements to make quality of life comparisons more reliable.** Despite limitations, this is the first time that Quality of Life is being mapped at NUTS 3 level, introducing much more granularity in the discussion compared to already existing indicators, up to date only at NUTS 2 level. This pilot exercise shows the added value of the effort to increase territorial resolution in the discussion of quality of life, allowing insights related to cross-border areas or different territorial typologies.

The map below displays the territorial dimension of Quality of Life in Europe, considering altogether the Quality of Life enablers on the one side (conditions that exist in the territory and that facilitate quality of life), Quality of Life Maintenance (as experienced by citizens, in relation to a healthy personal life, healthy economy and healthy environment) and Life Flourishing (as

experienced by citizens in relation to the fulfilment of personal aspirations, community flourishing and ecological flourishing).

Figure 2 Territorial Quality of Life composite index



The results reflect to some extent a centre-periphery pattern, driven in many cases by the situation of the European regions in relation to their economic indicators. Similar core-periphery patterns can be observed in the EU-SPI work by DG REGIO and to some extent in the OECD Better Life Regional mapping. This situation is mainly related to the fact that service availability (quantitative) tends to be higher in more affluent regions, as well as the socioeconomic indicators related to health, education and labour market.

Several peripheral regions and southern regions perform well in the environmental domains (e.g. ecological flourishing, green infrastructure) and subjective aspects of life maintenance and flourishing (e.g. interpersonal trust, self-esteem). Despite this fact, positive performance in these sub-domains does not fully compensate for lower performance in other previously discussed sub-domains more closely related to socioeconomic conditions. All in all, the little availability and lower relative accuracy of environmental indicators and subjective indicators linked to TQoL aspects of life maintenance and flourishing require prudent interpretation of observed trends.

In general, very high quality of life patterns are identified in the Nordic Countries, in particular in Norway, Sweden and Iceland, but also Finland and Denmark rank among top European regions in terms of Quality of Life. Regions located in countries along the “Blue Banana” perform well too, specially regions in southwestern Germany, in Switzerland and western parts Austria, in the Netherlands and several regions in the UK.

Interestingly enough, we also see relatively high quality of life in several regions in the Mediterranean region, in Spain – the Basque Country and Cantabria, Catalonia, Madrid and parts of Castilla León, in northern and western Greece – eastern Macedonia, Epirus, in Malta and Cyprus, in the northernmost coastal regions of Italy – Liguria, Friuli, Trentino, Slovenia, and in south-eastern France – parts of the Rhone valley, the French Alps, and the Occitaine region.

In general we see capital regions and large cities showing better performance, with high quality of life indices in Paris and Brussels, but also regions like Warsaw and Krakow performing better than most areas in Poland, Lisbon and Porto in Portugal, Prague in the Check Republic, Bratislava in Slovakia, Vilnius in Lithuania, Zagreb in Croatia.

In some areas, rural and intermediate regions show good overall performance too driven by very good scoring in the environmental domains and holding good socioeconomic conditions in other domains, like the case of Ardège region just south of Lyon or Cantabria in northern Spain.

Nevertheless, regions lagging behind prevail in Central and Eastern Europe, and in wide areas of the Mediterranean region.

The Latent Class clustering method

An important limitation of the composite index approach is that, while allowing for comparisons between regions, it represents *quantity* and not *quality*. Hence, the index only allows statements of the kind "region X performs better on the index than region Y", but the qualitative reasons underlying this statement are obscured because of the aggregated nature of an index. It may even be the case that two regions perform exactly the same on the index, but for very different reasons.

To illustrate the benefits of the clustering approach empirically the latent class clustering approach has been applied on indicators collected at European, national (the Netherlands), regional (the Lazio region – NUTS 2 level in Italy) and local level (Barcelona). In general, the results of the applications show that, in line with expectations, it is indeed the case that qualitatively distinct QoL profiles may underlie similar aggregate/composite QoL scores. As such, the QoL profiles provide actionable insights to policy makers, revealing which dimensions should be the focus of policy if the aim is to improve (overall) QoL.

The application of the clustering approach to the European NUTS 3 regions indicates the three dimensions of the TQoL framework (good life enablers, life maintenance and life flourishing) are positively correlated with one another and also with subjective well-being. Yet, the correlations are far from perfect, indicating that there are regions with QoL profiles which score well objectively, but relatively poor subjectively and vice versa. The latent class clustering approach is able to reveal these (groups of) regions and their specific patterns.

Citizen-centric approach

Citizens' engagement is the other key component of the QoL measurement methodology that needs further attention, development, and applied research to become established as a democratic practice everywhere in Europe. The first step is to define the directions societies should follow. The choice of the indicators to monitor progress along these directions will necessarily reflect values and priorities. A set of QoL indicators needs to embody, at different territorial levels (EU, national, regional, local), a shared idea of quality of life improvement.

Such a democratic process is what we call a **"citizen-centric" approach to measuring quality of life** in the European territories. It is to be conceived as a participatory process to engage the citizens in the choice of indicators to guide the place where they live (a nation, a city, a rural area) towards a fair and sustainable quality of life. However, deciding about the

indicators to measure QoL is not straightforward. They will reflect the specific set of values and priorities of whoever – institutions, researchers, private business, civil society organisations, citizens – selects them. The involvement of civil society actors is particularly relevant to ensure the freedom of expression and enable citizens' empowerment in the policy decisions affecting quality of life. Therefore, in order to grant full democratic legitimacy to territorial QoL measurement, a truly citizen-centric approach should treat consider public participation based on extensive deliberation with civil society actors to be as indispensable.

Specifically, the citizen-centric approach can take different forms in different places – from people's juries to deliberative surveys, from physical town-hall type meetings to virtual workshops engaging people in the selection of measurement priorities and/or in a "factfulness" test of QoL indicators. However, to ensure the widespread application of QoL measurement and that decisions are increasingly legitimised, shared and supported by sound reasoning across Europe, an effort is needed to scale up local experience, building a European milieu for QoL policy innovation with the creation of a network of **Territorial QoL Living Labs**.

Reflections on COVID-19 impacts

The COVID-19 pandemic started during the case studies' stage of our research project. From March 2020 onwards, essential foundations of the people's quality of life have been shaken by an introduction of government-imposed containment and lock-down measures. It is too early to assess the actual impact of the pandemic to quality of life priorities and the QoL measurement methodology. However, we cannot dismiss or at least consider in a preliminary fashion the impact that the current global pandemic crisis may have on future life and the measurement of quality of life at territorial level. Summing up we can draw the following conclusions from the case studies:

- First, the crisis impacts significantly on all aspects of QoL. Especially factors that enable a good life (first pillar) have proven to be very relevant for overcoming the crisis. Good quality housing, good quality of the residential area, good accessibility of public services, especially health services, high digital connectivity, availability of green infrastructure are all factors that helped to sustain a reasonable QoL during the lockdown, and investment in these sectors is now seen as vital to recover and built up a safer and better life for all in the coming months and years.
- Second, the crisis is also triggering the public and political attention for the need to improve and safeguard a good QoL at territorial level. The model for TQoL we present in this study shows to a very high degree the domains that are relevant for ensuring a higher resilience of neighbourhoods and territories against health, social and economic crisis situations. These sub-dimensions can be used to establish a dashboard for factors relevant for overcoming the Covid-19 crisis, either by taking just these sub-domains or by putting higher weights to these.

Results of 10 case studies

The project includes **10 case studies** of different territorial contexts chosen across different countries of Europe: Vienna, Barcelona/Catalonia Helsinki-Uusima, North Eastern Iceland, Luxembourg, Nova Gorica/Gorizia, Wales, Netherlands, Latvia, Inner Areas Lazio/Monti Reatini. They were selected to investigate current practices in integrating quality of life measurements in national, regional, and local territorial development strategies, and to test the Territorial Quality of Life (TQoL) measurement methodology. The case studies show a wide range of QoL concepts, such as definition, policy context, use of data, indicators, and citizen participation. Not surprisingly, concepts are tailored to the needs of each region; there is not a unique approach, nor a single concept that can be applied in all territorial context.

Two broad lessons can be drawn from the case studies:

- First, **the context and purpose of QoL measurement is different depending on the territorial scale**:
    - At **European and national level,** the main focus is on comparing and benchmarking quality of life across countries and regions (NUTS 2). Here it is very useful to apply methods to gauge different QoL levels and trends that are available at international level, like the Social Progress Indicators (SPI). However, the same approach is less advantageous for policy monitoring, as the information available is often not detailed enough to be useful to analyse the impact of single policies. Therefore, the main message from this is that QoL concepts should not be overloaded with tasks, like international or interregional benchmarking and policy monitoring handled together.
    - Several approaches useful to policy monitoring are found at **national and regional level.** Often the concepts have a strong focus on welfare and public service provision, but to in order to frame comprehensive multi-sectoral QoL policies it is very important to develop them together with the definition of QoL indicators and measurements. This should be based on a clear intervention logic, using our TQoL framework to identify the dimensions and sub-domains of QoL. It is equally important to involve stakeholders in the entire process, not only in the definition of indicators.
    - At **urban or metropolitan level,** more comprehensive approaches could benefit from involving citizens in the definition of QoL, applying the concept to a functional urban region and introducing territorial planning approaches (as in Vienna).
    - Quality of life in **sparsely populated peripheral regions** differs greatly from the central regions, also due to market mechanisms leading to a reduced service provision in some sectors, especially for peripheral areas. Policy attention and investments are often also proportional to the size of population settled in the area, so usually low for these regions.
    - Finally, even the mere observation of QoL in a **cross-border context** is very difficult, as there are different policy stakeholders and different national statistical and institutional systems involved. The case studies for Luxembourg and Nova Gorica/Gorizia have provided good indications of how to further develop cross-border approaches, e.g. in future INTERREG projects that could benefit from new and better harmonised data collection efforts. The TQoL concept here should be used as basis for a joint definition by both sides of QoL.
- Second, **which indicators are selected** to concretely measure the QoL in a given territory is determined by:
    - The type of stakeholders and institutions involved and the respective policy purpose. In this **institutions-driven choice** of QoL aspects, different bodies act as advocates of their respective territory.
    - The data used or generated and the potential for showing regional differences within the territory. In this **data-driven choice** of QoL aspects, the selection of indicators is often limited to “what we have” instead of “what we need”.
    - People’s perception of their neighbouring areas. This is the most innovative approach – observed in the Vienna case – where the assessment of QoL is based on the **people’s perception** of the quality of housing, neighbourhood, amenities, and services in the area they live in – and can be compared over longer time-periods.

Moreover, the results from applying the methodology in the case studies show that the TQoL framework is a very useful guidance as to which pillars, dimensions and sub-domains may constitute QoL, and which are actually used. This TQoL framework can easily be adapted to include further sub-domains if deemed useful by the stakeholders. In the case studies we found this current framework adequate, with some specific adjustments that could be implemented in future projects (e.g. better explanations, expanding the definition of consumption opportunities by prosumption indicators, changing "cultural assets" to "culture and sport", including "safety" in the "housing and basic utilities" sub-domain). Finally, the **citizen-centric approach is perceived as useful by the stakeholders interviewed in all case studies, but in practice is rarely applied**.

Tailor-made policy recommendations

After testing the TQoL model and dashboard tool at European and local level in the case studies, several conclusions and recommendations emerged to help policy makers and citizens to measure and improve quality of life in their territories. The different geographical levels and functional actors of the European multi-level and multi-stakeholder governance system are also addressed. Generally speaking:

- The **EU and the national governments** should continuously monitor the progress in QoL and provide the means (finance and guidelines) for regional and local authorities to provide QoL for their citizens, accordingly.
- The **regional and local authorities** should retain the responsibility and resources to do the practical QoL work regarding public investments and new regulations to improve QoL.
- The **private and third sector** actors should have the possibility to engage in policy co-creation processes, contributing to the definition of QoL targets and responding to needs for providing goods and services to improve QoL in close cooperation with the regional and local authorities.
- The **citizens** should also be engaged in policy co-creation processes. Through for example surveys, interviews and/or focus groups citizens can be included in defining QoL needs so as regional and local authorities as well as private and third sector actors can respond to, along with assessing QoL achievements.

Targeted policy recommendations are summarised below for different aspects.

Recommendations to improve quality of life governance:

- **Strengthen multi-level and multi-sectoral collaboration between stakeholders in the Member States and the EU** in different policy areas for coordinated and improved use of their respective powers, clarifying their roles and responsibilities to better coordinate QoL related policies.

- The **Member States as well as regional and local authorities** need to:

    - **Continuously draw on the experiences and good practices from others** when developing and improving their own system for measuring and monitoring in line with the proposed TQoL framework.

    - **Consider TQoL measurement effort in tandem with the development strategies and targets** (as Wales does) to ensure a good fit between the indicators and objectives, i.e. the targets need to be set in such a way that the progress towards

achieving them can be measured and vice versa. The selected indicators need to be able to give causal inferences on the development towards meeting the target.

- Design preliminary terms of conduct if the development trend deviates significantly from the target. That is, **there should be an action plan to be implemented in case of severe negative developments observed via the TQoL framework**.

Recommendations to enhance Quality of life, Sustainable Development and Cohesion Policy measurements coherence:

- **Link the 17 UN SDGs to QoL in territorial development strategies** to meet the policy ambitions of the EU in achieving a more sustainable Union. To link concretely the UN SDGs and QoL together, regional and local governments need a more focused list of relevant indicators (instead of the existing list of 231 SDG indicators). **The TQoL framework should be applied to narrow down the list of relevant SDG indicators**.

- The process could also be applied the other way around. That is, the TQoL framework could be a very useful tool to be implemented at the very core of the SDGs localisation venture. **The TQoL framework should be applied to help define the SDG domains and the technical indicators** that regional and local governments can afford when collecting the necessary data.

- When planning for cohesion policy interventions, **QoL indicators of the respective territories should be taken into consideration, considering data availability and addressing specific data needs** to feed reliable QoL measurement and monitoring exercises

- **A better balance between subjective and objective indicators should be achieved,** as the former are under-represented in the current practice. Subjective indicators would provide more insights into TQoL aspects of life maintenance and flourishing, but when a survey including subjective well-being question exists, this is usually based on a national sample, too small to provide information at more detailed territorial level. However, instead of focusing on objective indicators alone, subjective indicators are needed to understand the QoL assessment of the population. The subjective indicators have to be collected mostly through surveys, but big data sources can also be used, e.g. to measure what kind of services are asked for (travel patterns, search history in Google trends etc.). Big data produced continuously by remote sensing devices at home, in the streets (e.g. using smart street lamps) can also help to trace the behaviour of consumers and citizens with objective indicators of real time use, flows, etc.

- The **Official Statistical System – the EU and national agencies – should aim to provide factual, objective, reliable and comparable information and statistics beyond the EU, national and regional NUTS 2 levels**. These data collection efforts need to be coordinated to ensure comparable regional coverage between the various EU agencies. In this respect, it is recommended to take advantage of the TQoL coding exercises reported in the case studies **to uncover the gaps in existing data**.
- **Collect the data on a sub-regional scale to uncover differences between core, peripheral and remote areas of the region as well as for different socio-economic groups to uncover (hidden) differences between affluent and deprived social groups**. This also will support the definition of QoL in cross-border areas.

Recommendations to implement a citizen-centric approach to QoL measurement:

- **To involve the citizens to define what QoL means for them**. At a national level, Iceland has just started an interesting process in which citizens are involved in defining well-being and we recommend that other countries follow this example.
- **Involving the citizens in the development work of the TQoL measurement schemes** (not just in the data collection phase) would improve the relevance of the indicators for both the regional authorities and the citizens. The work Iceland has started to do also in this aspect is worth considering by other countries.
- Applying **the factfullness approach** would allow the authorities to make a distinction between misconceptions and fact-based evidence in their TQoL measurement. Factfullness tests can involve small groups of citizens in focus groups activities, asking them to guess the answers to questions related to the trends of different aspects of quality of life – e.g. personal health, quality of the environment, security. This may show discrepancies between their guesses and the real trends measured by the TQoL indicators, which need to be further analysed.
- The citizen-centric approach could **use existing citizens consultation/deliberation platforms** (e.g. DECIDIM in Barcelona and other cities of Europe) to be put more easily in practice, engaging citizens at local level in discussing and deliberating about the implementation of indicators for measuring life flourishing and other pillars of the TQoL.
- Consider applying the Outcome-Based Accountability approach (for more detail see Appendix4 of main report) as a practical framework in order to organize the process from defining indicators to taking action, monitoring and adjusting. Outcome-based Accountability (OBA) is a disciplined way of thinking and taking action that communities can use to improve the lives of children, youth, families, adults and the community as a whole. OBA is also used by organisations to improve the performance of their programs or services.
- Recently issued OECD highlights on innovative citizens' participation and new democratic institutions (OECD, 2020b) provide good practice principles to ensure sound and effective citizens' engagement in deliberative processes. These criteria and the OECD report proposals for action may also help to establish on a more permanent basis a citizen-centric approach, **promoting a new wave of representative deliberative processes focusing on quality of life indicators selection and use across the EU.**

Recommendations to address COVID-19 impacts on QoL:

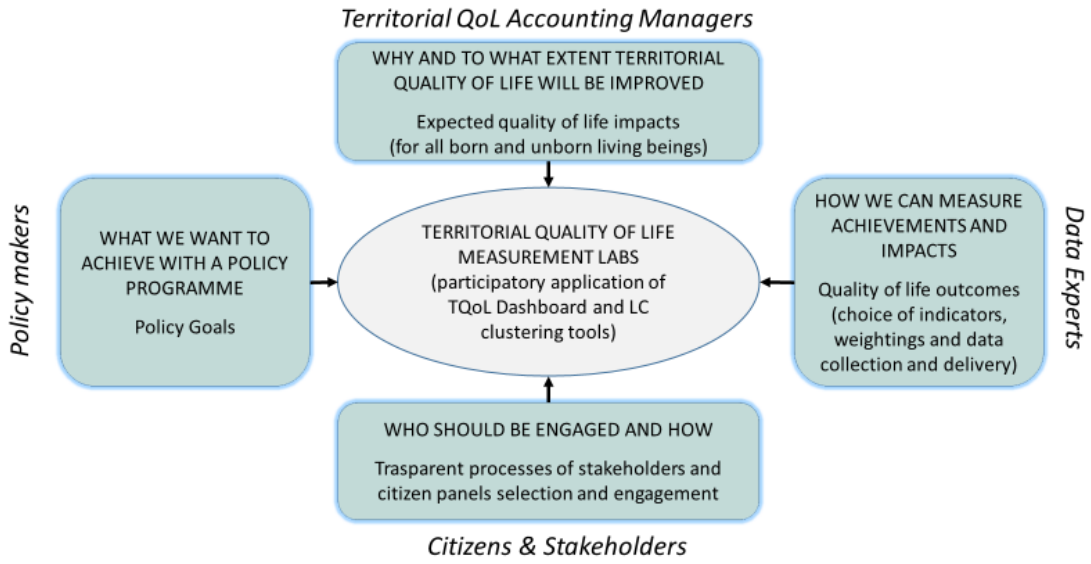
- **The TQoL framework should be used as a tool to promote post-Covid scenario building exercises at regional level**. The use of the TQoL framework can play an important role in the scenario exercise identifying what part of the good life enablers (e.g. health care, education, transport, digital connectivity housing, and work) need support to recover. In turn, this kind of information would help the post-Covid recovery efforts.
- **The TQoL framework should be used as a tool to measure the new (post-Covid) needs for QoL goods and services** and to promote the related policy responses.

Further ideas for future cooperation between ESPON, EUROSTAT, the OECD and the UN

A main guiding idea for future cooperation between ESPON and other international agencies, emerging from the project results and recommendations presented in the previous sections of the report, would be **to call all relevant actors to build together a Territorial Quality of Life Accounting infrastructure**.

This should be implemented using a citizen-centric approach, as illustrated in Figure 3 below:[2]

Figure 3 Territorial Quality of Life Accounting infrastructure



The key nodes of the TQoL Accounting infrastructure are the **Territorial Quality of Life Measurement Labs**. These are living labs, engaging in one process and real (e.g. town hall type meeting) or virtual (e.g. ZOOM) meetings of small groups of citizens selected for the purpose, stakeholder representatives, data experts and policy makers under the coordination of TQoL Accounting managers.

The TQoL labs are the concrete settings and processes where the TQoL tools – primarily the dashboard and the LC clustering tool, the latter required when the analysis of underlying QoL patterns could help to frame more precisely the territorial QoL measurement and monitoring effort – are applied in a transparent and participatory way.

Each TQoL lab will develop its own activity and practice depending on the specific scale – European, national, regional, local - territorial context and nature of main QoL challenges on focus, but they will all share the TQoL framework and tools to frame the measurement and a

[2] The idea is partially inspired by Outcome-Based Accountability (OBA) framework, which introduces outcomes indicators for measuring the quality of life for the whole population living in or visiting a territory. The measurement is referred to the whole population, so from the citizens everyday life perspective, not only that of the users of a certain service or facility. More details of the concept are presented in Appendix 4.

same structure of questions to organise the interaction and contribution of the living labs' participants. The questions are:

- **What we want to achieve with a policy programme?** This question asks policy makers to describe the policy goals pursued with their policies.
- **Why and to what extent territorial quality of life will be affected?** This question is raised by TQoL accounting managers using the conceptual framework described in detail in Appendix 1, inviting participants to assess the expected quality of life impacts of the policies and plans under scrutiny.
- **How can we measure the direct achievements of the policy programmes and the broader impacts on quality of life?** This question is for the data experts – scientists and statisticians – to deal with, offering a portfolio of data solutions (indicators, weightings, data collection/survey facilities and procedures for delivery) to feed the TQoL dashboard and LC clustering tools application.
- **Who should be engaged and how?** Citizens and stakeholders' engagement calls for a careful design and implementation to ensure transparency and effectiveness all along the chain of participants' selection, information, preparation and moderation of the meetings, reporting and communication. This is therefore a question for the TQoL managers to handle appropriately.

We recommend **developing a European platform to support the measurement of territorial quality of life and the implementation of a citizen-centric approach across different territories in Europe**. Establishing an ESPON contact point for facilitating the implementation of the TQoL methodology into practice could be of great help, e.g. to launch calls for spin-off applications led by ESPON network members and universities, providing a supporting environment for the access to the TQoL dashboard tool, the exchange of experiences and the continuous improvement of the method.

Recommendations for further research

Further research on theoretical foundations would be needed, therefore, especially to strengthen the life flourishing pillar of the TQoL framework and to stimulate the production of subjective measurements catching "first-person experience" of quality of life, as well as of indicators for measuring community and ecological flourishing.

Research and proposed measurements should take into account Antonio Damasio' concept of homeostasis as the force that ensures that life is regulated within a range that is not just compatible with survival but also conducive to flourishing, to a projection of life into the future of an organism or a species. At the same time the enlivened worldview of Andreas Weber that situates human beings deeply in a web of dynamic, living and unfolding creative relationships as well as the concept of the "Commons" should be used as reference and inspiration.

On more practical grounds, and with reference to the single dimensions, domains and sub-domains of the TQoL framework, further research is needed to implement and allow the measurement system to reflect the evolution of measurement needs by one side and data availability and statistical processes (e.g. new surveys with a greater granularity) by the other.

More in detail, and with reference to the TQoL coding system and indicators identified at the European scale (NUTS 3 level):

- For the housing and utilities domain, it could be worth adding an indicator on drinking water. It could be the quantity of water supplied to billed users, or it could be a ratio between supplied and non-supplied families. The previous is easier perhaps to generate (at

municipality level and then aggregated at NUTS 3 level), while the latter may be more appropriate to show the level of enabling QoL regarding drinking water.

- "Good Life Enablers" indicators should measure not only the quantity of services and opportunities (jobs, shops, etc.) available or accessible in the place, but also their quality by means of performance indicators (e.g. waiting times for health-care interventions, quality of educational programmes, etc.). This will require further efforts to collect harmonised data, for example following the practice to collect health and education diagnosis indicators at municipal level in Italy. Moreover, some accessibility indicators are by default higher in central/urban than in peripheral/rural areas (e.g. accessibility to jobs, transport, services etc.), and simply using them to compare QoL across urban and rural areas would be misleading. To offset this, a more articulated formulation of accessibility indicators will be needed to consider obviously different targets in urban and rural areas, and provide indicators tailored to the different territorial contexts.
- Further research is needed for strengthening the measurement of ecological factors by shifting from production-based to consumption-based indicators of CO2 reduction and footprints. In this respect, the sub-domain "consumption" in the good life enabler pillar – now measuring the range of consumption choices available in the territory (i.e. presence and opening time of shops, leisure centers, etc.) – should be extended to measure the typology of consumption prevailing in the place (e.g. share of sustainable goods and services, plastic use, etc.) and the ecological footprint of these local consumption activities - the latter to be more properly classified as climate change related indicators in the life maintenance pillar.
- Better indicators should be developed for measuring the self-esteem domain, e.g. using data related to personal or minorities' dignity and respect.
- A more general approach and research is needed to consolidate the indicators used to fill the TQoL at different territorial levels. The concept of "tiers" to judge the level of methodological development and data availability across the world, introduced for the UN sustainable development indicators, should be adopted for the TQoL indicators at European level. This further methodological development is especially needed to improve the indicators used for some domains at the European level (NUTS 3), in particular: the indicators of work and consumption opportunities in the "good life enablers" dimension, to measure not only the presence of workplaces and shops or services, but also their dimension (number of jobs or other indicators, such as the average number of visitors of shopping centres), the indicators of cultural assets (e.g. using the number of libraries, not only the presence of cinemas), personal health indicators (e.g. healthy life expectancy at birth would be better than life expectancy at birth), and the indicators of biodiversity and ecosystems services.
- Given the relevance of the citizen-centric approach in measuring territorial quality of life, it would be absolutely necessary to find and include indicators to monitor citizens' engagement, in the institutional trust/good governance domain. In this domain, besides measuring trust and corruption, and the Quality of Governance index, it is indeed worthwhile to look at the participation of people in participative consultation and/or deliberation processes influencing decision making. As data on this are most probably not available, again further research to develop a consistent methodology would be needed.
- Both the exact meaning, boundaries, and indicators of "ecological flourishing" need further research to be improved. Currently this category of the TQoL includes only invasive alien species, which is not sufficient to measure ecological flourishing. A clear distinction should

be made between ecological vulnerability and resilience concept and indicators included in the "life maintenance" dimension, and what is measured in the "ecological flourishing" dimension. The boundary is fuzzy.

Finally, quality of life perception surveys should be administered across Europe, making an effort to achieve a greater granularity with larger samples, to eventually get few more subjective indicators in the maintenance and flourishing dimensions of the TQoL framework. New data collection procedures should be also implemented to provide the information needed for the full application of the TQoL framework. This is particularly true for **the ecological flourishing indicators and environmental concerns which cannot be adequately covered by currently available statistics and environmental accounting frameworks.**

In addition, we recommend an alternative "mission-driven" approach of statistical research and collection of data. This is exemplified below for the TQoL domain "ecosystems services and biodiversity wealth" (Radermacher 2020).[3] To enhance data collection in this domain, we recommend **to start much more quickly, less ambitiously and more pragmatically with a programme tailored to European policy: the European Green Deal and one of its main components, the EU Biodiversity Strategy**.

Taking a mission-driven approach, we should ask ourselves: What can we do for European ecosystems, their resilience and the biodiversity that lives (or dies) with them? So, the focus is firstly on the EU and Member States policy levels, before breaking down to the regional and local level which is the primary focus of ESPON. Such a definition of the target policy level and a mission – "what for" question – is crucial if one wants to achieve a quick result. A statistical-ecological reporting system should be set up with a rapid implementation, addressing different data collection levels:

a) *Census level (remote sensing)*: statistics of land use/cover repeated regularly (proposal every two years) for a defined grid of appropriate granulation (proposal 1 sq. km), of course for whole Europe.

b) *Sample level (aerial photograph/fieldwork)*: A stratified sample of the census grids/points between 0.5% and 5% sampling rate (depending on land use/cover), in which ecosystem features are collected periodically (e.g. every two years).

c) *Sub-sample (fieldwork/crowd sourcing)*: In another, even smaller sub-sample between 0.005% and 0.01% (stratified, depending on the ecosystem and its features) selected variables are collected to quantify biodiversity, e.g. the biomass of insects.

Such a statistical-ecological reporting system could be implemented in the short term, i.e. in two to three years – if there is sufficient political will at EU and Member States level, and the technical support of EUROSTAT, the NSOs and other relevant EU agencies (namely EEA).

[3] Similar "mission-driven" statistical research and data collection programs could be proposed and implemented to address other environmental concerns, e.g. plastic pollution or the data needed to support Disaster Risk Reduction (DRR) policies across Europe. Here we concentrate on providing the biodiversity data collection as an example of practice that could be adapted for other missions as well, with obvious changes which is however beyond the scope of our study to analyse in depth.

ESPON 2020 – More information

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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.