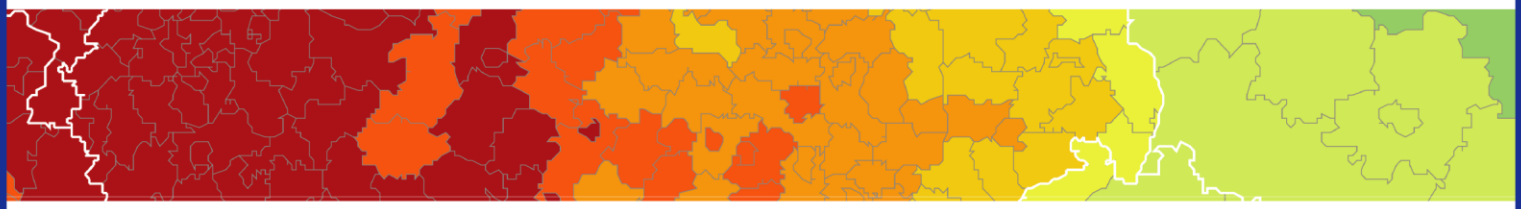

ESPON QoL – Quality of Life Measurements and Methodology

Annex to the Draft Final Report

Applied Research

Final Report

30th October 2020

Final Report

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

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

Annex 2: Territorial Quality of Life Dashboard Tool

ESPON QoL – Quality of Life Measurements and Methodology

30th October 2020

Disclaimer:
This document is an Annex to the 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	Luxemburg
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

1 Territorial Quality of Life Dashboard Tool

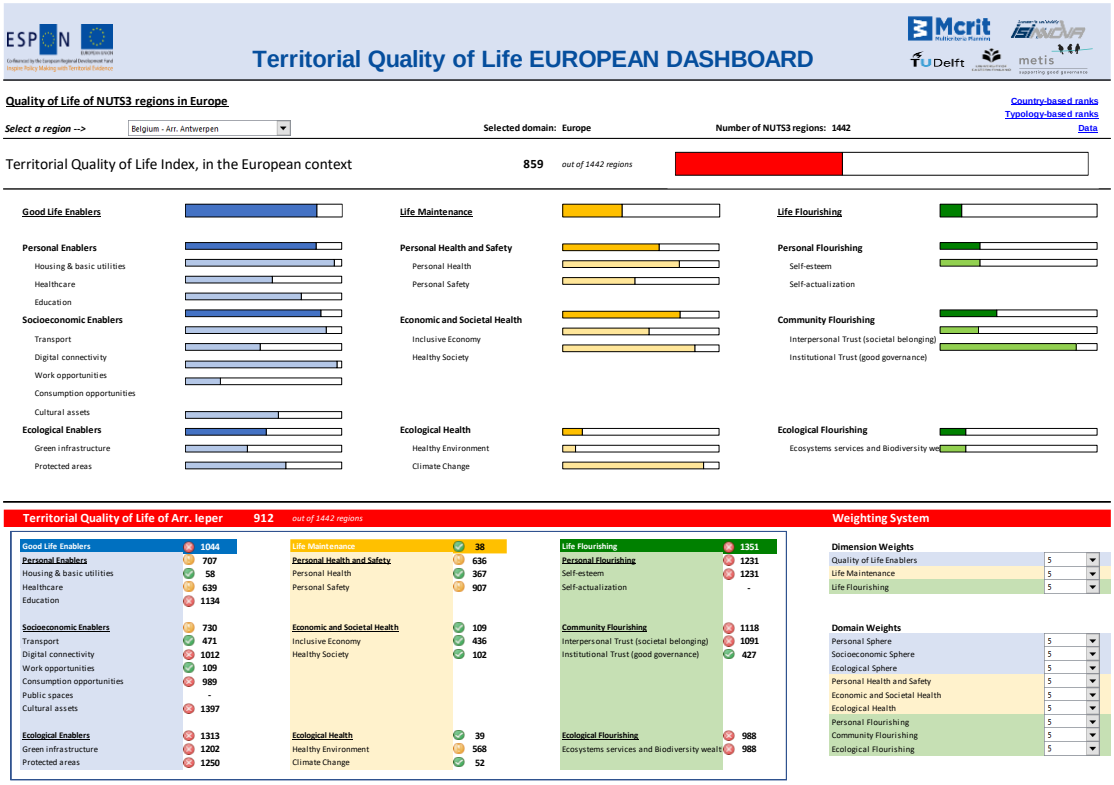
1.1 Quality of Life Dashboard

To illustrate the QoL methodology an excel tool has been made, which allows policy makers to explore the relationships between various structural conditions of EU regions (NUTS 3 regions) and different aspects of Quality of life at different levels (sub-domains, domains, dimension and global).

The regions considered are the ones located in the 27 European Union countries, in the United Kingdom, the EFTA countries (CH, NO, LI & IS) and the WBC with an ESPON official NUTS3 territorial divisions (AL, ME, MK & RS).

The Dashboard has been developed to visualize in an understandable and a comprehensive way the TQoL Index results, the tool allows us to make a quick assessment of any European region at NUTS 3 level.

Figure 1 TQoL performance representations displayed in the dashboard for the European context.



The performance of the region analysed has been made ranking the TQoL index values in a selected context. We ranked the values according to 3 different territorial contexts:

- European context, it shows the performance of the region compared to the 1442 NUTS3 European regions.
- Country context, it shows the performance of the region compared to the other regions of the same country.
- Urban-rural typology, it shows the performance of the region compared to the regions with the same urban-rural typology (381 urban regions, 607 intermediate regions or 454 rural regions).

The following figures are just an example of how a European region is portrayed according to the criteria above. In the specific case, the SE214 Gotlands län region in Sweden ranks

- 78 out of all 1442 NUTS regions in Europe in terms of QoL
- 11 out of 21 regions in Sweden
- 5 out of 454 rural regions in Europe

Figure 2 Territorial QoL Index global performance representation of the Gotlands län region in the European (top), national (middle) and urban (bottom) contexts.

For each of the 3 contexts, the region's TQoL performance is represented in 2 ways,

- The first one is a graphic representation composed by bars, the fuller the bar the better the individual score of the region for an specific domain, subdomain or dimension, thus the higher is the ranking position of the region in the selected context.

The second representation, is a numeric one where it shows the exact ranking position of the region followed by a visual indicator ( ), indicating in green that the region is ranked among the TOP third of the regions considered, yellow the intermediate third, and red the bottom third. The Dashboard also allows you to define a weighting system at the domain (9 domains) and dimension (3 dimensions) levels. Each domains and dimension can be given a weight value between 1 and 9. This allows you to prioritize the different aspects defined in the Territorial QoL framework to calculate a more accurate Quality of Life Index aligned with the priorities of the region typology (e.g. urban-rural typology).

1.2 Dashboard Tool for local policy makers

A version of the Dashboard tool has been created to allow local policy makers analysing Territorial Quality of Life in smaller contexts using the same framework defined at a European level.

The tool allows introducing customised indicators for each of the TQoL dimensions, then performs all the necessary normalisation processes, calculates the Territorial Quality of Life Index at different levels (sub-domain, domain, dimension and global) and displays results using the same interface as the European wide tool.

Structure

The Dashboard tool is composed by 3 tabs:

- ESPON Dashboard tab. It shows the graphic and numeric representation of performance of the selected region compared to the total number of regions considered. Users can change the weights of the different variables as observe resulting outputs.
- DATA tab. In this tab users introduce their own indicators. Normalization of variables is performed automatically.
- THERY tab. It synthesises the theoretical framework of the Territorial Quality of Life index; it should be used as a guide to classify the indicators by sub-domains.

How to use

1. Indicators selection and data gathering

Users need to identify a list of indicators that will be used to represent each of the TQoL components (each of the sub-domains defined in the framework). To assist users in this regards, there is tab in the Dashboard tool named “Framework” that contains the code system (sub-domains, domains and dimension) and which indicators can fit in each sub-domain. The following figure show the information contained in the “Framework” tab.

Figure 3 Coding indicators system

Dim.	Dom.	Sub-domain	WHAT	WHY
Good Life Enablers	Personal Enablers	Housing & basic utilities (b11)	Indicators of availability and affordability (market prices, social housing) of houses and housing space. Indicators of quality of the housing stock and built environment (e.g. respect of urbanistic standards). Indicators of availability and affordability (prices and taxes) for energy, water supply and sewage, and waste collection and treatment services.	The availability and affordability of good housing and basic utilities is a pre-requisite for choosing to settle/live in a place
		Healthcare (b12)	Indicators of availability, accessibility, and affordability (prices and taxes) for health infrastructure and services. Indicators measuring the quality of the infrastructure and services.	The availability or accessibility in a reasonable time threshold of hospitals and other health care facilities is a basic need for life
		Education (b13)	Indicators of availability, accessibility, and affordability (prices and taxes) for education infrastructure and services. Indicators measuring the quality of the infrastructure and services.	The availability or accessibility in a reasonable time threshold of primary, secondary, high schools is a basic need for the households with children to settle/live in a place.
	Socioeconomic Enablers	Transport (b21)	Indicators of availability, accessibility, and affordability (prices and taxes) for transport infrastructure and services. Indicators measuring the quality of the infrastructure and services.	Transport infrastructure and services are a pre-requisite for the people to move around and travel from/to their places
		Digital connectivity (b22)	Indicators of availability and affordability (prices) of ICT connection. Indicators measuring the usage and quality of the ICT connection.	Good broadband connections are a pre-requisite to access to the Web and online interaction opportunities.
		Work opportunities(b23)	Indicators of availability and accessibility of jobs (workplaces). Indicators measuring the quality of the workplaces (e.g. safety and comfort, respect of urbanistic standards, maintenance)	The availability or accessibility in a reasonable commuting time of job opportunities is a pre-requisite to participate in the labour market. The quality of the workplaces influences the quality of employers/employees life.
		Consumption opprotunities(b24)	Indicators of availability and accessibility of shops and other services (e.g. entertainment) and online delivery. Indicators measuring the quality of the consumption places (e.g. safety and comfort, respect of urbanistic standards, maintenance)	The availability and accessibility in a reasonable time threshold of shops and service facilities influence the range of consumption choice. The same for the availability of fast online deliveries.
		Public spaces (b25)	Indicators of availability and accessibility of public spaces. Indicators measuring the quality of the public spaces maintenance.	Good public spaces facilitate social life
		Cultural assets (b26)	Indicators of availability, accessibility, and affordability (prices) of cultural assets (e.g. heritage sites, museums etc.). Indicators measuring the usage and the quality of the cultural assets' maintenance.	The availability and accessibility in a reasonable time threshold of cultural assets and options widen the range of quality of life experiences
	Ecological Enablers	Green infrastructure (b31)	At a wider territorial scale, this includes indicators of connectivity of green areas (woods, meadows) and the preservation of the agricultural mosaic. At city level, indicators of Urban Green (urban parks, street trees, gardens,...)	Availability of and access to green spots is key for health, sport and relax activities in the city, and to host biodiversity in the environment
		Protected areas (b32)	Indicators of availability and accessibility of natural protected areas (i.e. areas where flora, fauna, landscape is preserved, which makes protected areas different from other green infrastructure).	Accessible protected areas augment the opportunities to live in contact with nature.
Life Maintenance	Personal Health and Safety	Personal Health (m11)	Objective and subjective outcome indicators of status of personal health, nutrition, physical activity	Being in and perceiving a good health –body and mind –status is a fundamental quality of life ingredient
		Personal Safety (m12)	Objective and subjective outcome indicators of personal security, safety against accidents.	By the same token, living in and/or perceiving to live in a safe place is also fundamental for people quality of life
	Economic and Societal Health	Inclusive Economy (m21)	Mostly objective outcome indicators related to unemployment and employment rates, gender employment and salary gap, job security, work dignity, disposable income distribution, inequality of financial/real estate wealth of households (personal saving, house ownership, etc.)	An inclusive economy, low unemployment and high work security and dignity are a key ingredient for the people quality of life. The sub-domain does not include GDP or local productivity indicators, only aspects of earning and wealth distribution, equity, economic cohesion in the territory. Local productivity indicators are obviously important for local/regional development strategies, but the TQoL "inclusive economy" indicators focus on the spill-over of economic progress in terms of benefits for the citizens. They are complementary to GDP measurement – an orthogonal, not a collinear factor.
		Healthy Society (m22)	Mostly objective outcome indicators related to social disparities(population at risk of poverty, working poor families, social security coverage, work-life balance).	An healthy and not too unequal society influences the quality of life by reducing sources of stress and tensions
	Ecological Health	Healthy Environment (m31)	Objective and subjective outcome indicators related to the status of the environment (air quality, water quality, noise pollution, soil contamination)	An healthy environment prolongates life expectancy, reducing morbidity, and influences the subjective well-being of people
		Climate Change (m32)	Objective and subjective outcome indicators related to greenhouse gases emissions, decarbonization of the economy (economic activities, public and individual transport, housing, etc.), vulnerability, presence and persistence of risks, adaptation and access to Disaster Risk Reduction (DRR) policies and means (resources, plans, protection infrastructures), climate change impacts (vulnerability and adaptation), awareness and climate-friendly behaviour.	Less greenhouse emissions contribute to reduce the climate change risks for the present and future generations. Resilience to extreme events is fundamental to reduce people vulnerability and exposure to the harmful effects of climate change. Climate-friendly awareness will bring more sustainable consumption habits and lifestyles.
Life Flourishing	Personal Flourishing	Self-esteem (f11)	Mostly subjective outcome indicators related to recognition and respect from others and of self respect. Social tolerance (e.g. respect for minorities, disabled, LGBT)	Self-esteem is a pre-requisite for living a good life
		Self-actualization(f12)	Mostly subjective outcome indicators of self-realization of one's full potential (e.g. life satisfaction with jobs, mate acquisition, parenting, utilising, and developing abilities and talents, pursuing goals). Objective labour markets indicators of jobs matching with skills and competences	A purpose-full life is also a key ingredient of a good life
	Community Flourishing	Interpersonal Trust (societal belonging)(f21)	Objective and subjective outcome indicators of inter-personal trust (social capital).	The sense of belonging to a community and interpersonal trust influences the quality of life perception and experience.
		Institutional Trust (good governance)(f22)	Objective and subjective outcome indicators of institutional trust (governance). This category includes also active citizens participation as a mean to build or re-build trust in policy making.	Trust in institutions is a key factor for the quality of community life
	Ecological Flourishing	Ecosystems services and Biodiversity wealth(f31)	Indicators measuring the quantity and variety of ecosystems services in the territory sustaining quality of life perpetuation for all living species (biodiversity)	The quantity and quality of ecosystem services is key to ecological flourishing, and indirectly to preserve people health and reduce the risks of pandemic outbreaks

2. Variable definition

Once users have defined a list of indicators to be used, classified by the sub-domains of the TQoL index, they can proceed to introduce the data in the Dashboard tool.

The indicators should be introduced in the “QoL Data” tab:

Firstly, users need to introduce the name of the regions, counties, neighborhoods that will be considered (column B) and the code of these regions -if any- (column A). The tool allow to introduce up to 80 registers.

Secondly, users have to introduce the indicators in the selected sub-domains (they can add 2 indicators per sub-domain).

Thirdly, the calculation criteria needs to be defined. The calculation criteria are four:

- Bottom outliers: it defines the bottom percentile of which values you want to discard as bottom outliers
- Top outliers: it defines the top percentile of which values you want to discard as top outliers
- Indicator typology: it defines the nature of the indicator, it will be “positively” if the indicator has a positive contribution to quality of life (e.g. number of primary schools) or “negatively” if it is a negative contribution to quality of life (e.g. early school leavers)

- Skewness correction: it defines if the tool should apply a log10 transformation to correct the skewed data (Y = yes, N = no), the tool indicates which indicators present skewed data and if the log10 transformation can be applied.

The following figure shows an example of the table to be filled in the “QoL Data” tab. It shows 4 indicators classified among the first 4 sub-domains (b11, b12, b13 & b14) and the indicator data of the first 10 registers.

Figure 4 QoL Data tab

How to use?

1. Fill in indicators of quality of life in the table below and define the sub-domain (green cells). One indicator per column (by default there is space for 2 indicators per sub-domain). Check indicator definitions here

2. Check if skewness correction is needed. (no red cells in this line indicate all data is correct!) skewed data

Can Log10 transformation be applied? (red cells in this line indicate all log10 can not be applied!) Yes | No

3. Select if correction shall be applied (log10)

State [Y / N] --> | correct data? (Y/N) Y | correct data? (Y/N) N

4. Cut top outliers (%centile to be excluded)	97%		97%		97%		97%	
5. Cut bottom outliers (%centile to be excluded)	3%		3%		3%		3%	
6. State if indicator positvely influences QoL or negatively	negatively		positively		positively		positively	
Sub-domain -->	b11	b11	b12	b12	b13	b13	b21	b21

Code	Region name	6 - Main homes without heating (AyuntBCN)	-	247 - Area of the neighborhood intended for health services (%) (OpenDataBCN)	-	252 - Area of the neighborhood intended for education services (%) (OpenDataBCN)	-	261 - % Population with a public transport accessibility index (PTAI) over the average (ATM)	-
1	el Raval	0,11	-	0,06	-	0,05	-	1,00	-
2	el Barri Gòtic	0,16	-	0,04	-	0,14	-	1,00	-
3	la Barceloneta	0,21	-	0,04	-	0,14	-	0,37	-
4	Sant Pere, Santa Caterina i la Ribera	0,14	-	0,05	-	0,08	-	0,99	-
5	el Fort Pienc	0,17	-	0,02	-	0,06	-	1,00	-
6	la Sagrada Família	0,19	-	0,01	-	0,03	-	1,00	-
7	la Dreta de l'Eixample	0,09	-	0,02	-	0,17	-	0,99	-
8	l'Antiga Esquerra de l'Eixample	0,12	-	0,02	-	0,08	-	1,00	-
9	la Nova Esquerra de l'Eixample	0,06	-	0,03	-	0,06	-	1,00	-
10	Sant Antoni	0,09	-	0,01	-	0,04	-	0,99	-

3. *Results*

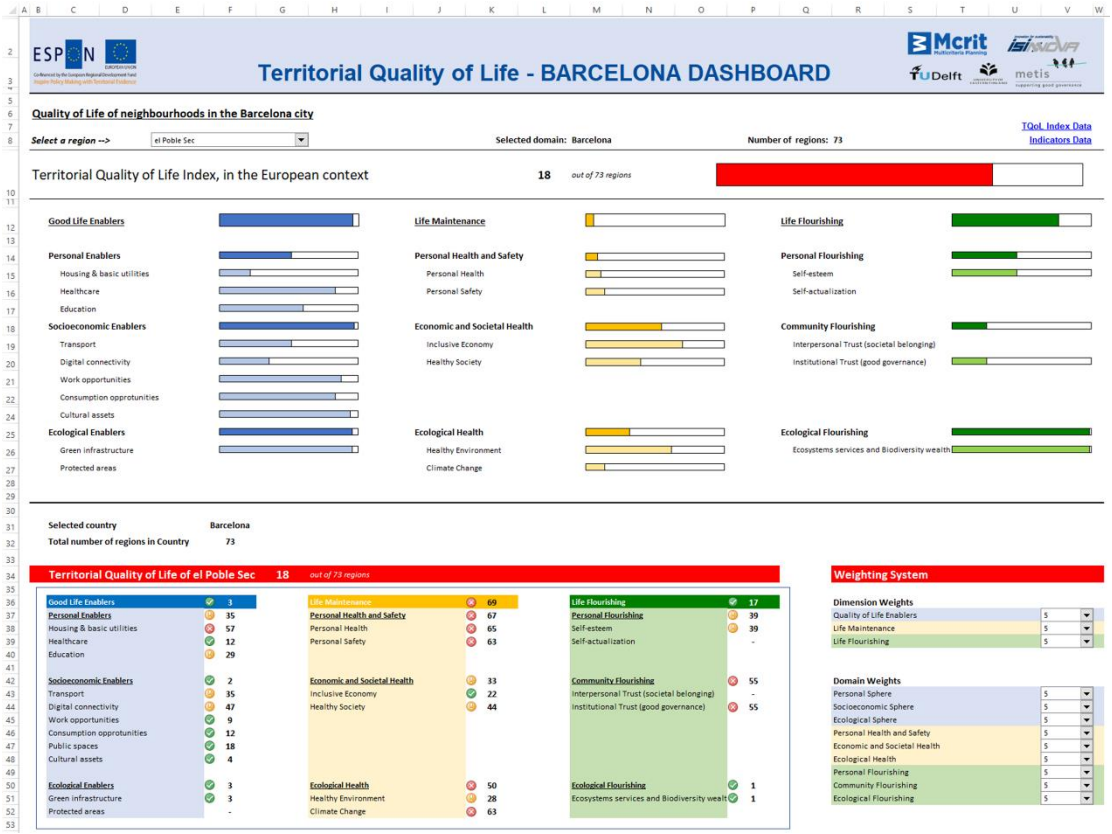
After introducing the indicators and defining the normalization variables, the results will be displayed in the “ESPON Dashboard” tab.

The region’s TQoL performance is represented in a graphic representation composed by bars and in a numeric one where it shows the exact ranking position of the region followed by a visual indicator ( ).

In this same tab (row 34, column R), you can define your own weighting system at a domain and dimension level. It allows to align the results according to the preferences of each context established by the user.

The following figure shows the “ESPON Dashboard” results representation and the weighting system.

Figure 5 ESPON Dashboard tab



2 Indicators & Mapping

2.1 TQoL dashboard methodology

Methodologically, our work builds upon the OECD Handbook on Constructing Composite 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. To ensure coherence with current policies and contributions to current state of the art, the indicators should be complementary to the EUROSTAT, OECD and UN datasets measuring progress towards the Sustainable Development Goals (SDG); be able to capture the effects of regional policy interventions, and have a high political, technical and communication utility. 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 (estimates are performed extrapolating from parent NUTS 2 regions and exceptionally from NUTS 0 when missing data are limited), and time series availability (considering relatively high inertia of Quality of Life, five- to 10-year intervals between successive estimates are considered enough). Still, the pragmatic approach is only used in the selection to build an operative QoL index based on what exists today, but the definition of the theoretical framework itself is based on what is desirable to measure and not on which indicators are available, as proposed by the OECD Handbook. The difference between both approaches will pave the way to recommend further (coordinated) efforts to fill the data gaps.

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. As stated by the OECD Handbook, this approach is the most common when variables are all intended to be “worth” the same in the composite index, or also in the absence of a statistical or an empirical basis allowing for differentiated weighting. However, what the TQoL dashboard tool produced so far allows for changing weights of each indicator within domains and sub-domains, for instance to apply weights after a consultation with groups of experts, stakeholders of citizens.

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. Finally, we take into account also further insights from case studies, suggesting changes in the TQoL overall framework.

Step 5. Indicator analysis and visualisation. The fourth step is organised in an iterative loop with the previous Steps 3 and 5. 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.

2.1 Selection of Territorial Quality of Life indicators at European level

Based on the above criteria, the selection of TQoL indicators proposed for the European level (ESPON area; NUTS 3) is shown in the following table.

Table 1 Existing indicators selected to fill the TQoL framework at European level (ESPON area NUTS 3)

Dim.	Dom.	Sub-dom.	What should indicators discrive in this sub-domain?	Selected indicators based on data availability	Rationality of indicator choice	Limitations of selected indicators and improvements
Quality of Life Enablers	Personal Sphere	Housing & basic utilities (b11)	WHAT: Indicators of availability and affordability (market prices, social housing) of houses and housing space. Indicators of quality of the housing stock and built environment (e.g. respect of planning standards). Indicators of availability and affordability (prices and taxes) for energy, water supply and sewage, and waste collection and treatment services. WHY: The availability and affordability of good housing and basic utilities is a pre-requisite for choosing to settle/live in a place.	Sanitation conditions (% uncollected sewerage & % sewerage treatment)	It aims to represent household conditions regarding the sewage system	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception and satisfaction with household conditions (sanitation, heating & cooling systems, isolation, housing affordability).
				Households lacking adequate heating	It aims to represent the lack of basic utilities (heating)	
				Household overcrowding	It aims to represent the living conditions (overcrowding)	
				Burdensome cost of housing	It aims to represent the affordability of housing	
		Health (b12)	WHAT: Indicators of availability, accessibility, and affordability (prices and taxes) for health infrastructure and services. Indicators measuring the quality of the infrastructure and services. WHY: The availability or accessibility within a reasonable time threshold of hospitals and other health care facilities is a basic need for life.	Availability of Hospital beds	It aims to represent the availability to basic health services such as hospital beds.	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception or satisfaction with "health" services accessibility
				Accessibility to health services (pharmacies, doctors and hospitals)	It aims to represent the availability to health services using as a proxy the percentage of area cathegorized as "highly accessible" to pharmacies, hospitals and doctors.	
		Education (b13)	WHAT: Indicators of availability, accessibility, and affordability (prices and taxes) for education infrastructure and services. Indicators measuring the quality of the infrastructure and services. WHY: The availability or accessibility in a reasonable time threshold of primary, secondary, high schools is a basic need for the households with children to settle/live in a place.	Accessibility to education (primary and secondary schools)	It aims to represent the accessibility of education using as a proxy the percentage of area cathegorized as "highly accessible" to primary or secondary schools	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception or satisfaction with the accessibility (commuting time, transport mode...), availability and affordability (budget destined to education...) of educational centers
	Socioeconomic Sphere	Transport (b21)	WHAT: indicators of availability, accessibility, and affordability (prices and taxes) for transport infrastructure and services. Indicators measuring the quality of the infrastructure and services. WHY: Transport infrastructure and services are a pre-requisite for the people to move around and travel from/to their places.	Access to high-level transport infrastructure	It aims to represent the accessibility to transport services using as a proxy an index evaluating the (airports, ports, highway) accesibility to main transport infrastructures	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception or satisfaction with the accessibility, availability and afordability of transport infrastructures and services.
		Digital connectivity (b22)	WHAT: Indicators of availability and affordability (prices) of ICT connection. Indicators measuring the usage and quality of the ICT connection. WHY: Good broadband connections are a pre-requisite to access to the Web and online interaction opportunities.	Efficiency of digital networks	It aims to represent the quaility of ICT connections	More information would be needed in relation to quality perception or satisfaction with the availability and afordability of ICT connection.
				Internet at home	It aims to represent the availability of internet at home	
				Online interaction with public authorities	It aims to represent the people willingness to use ICT connections	
		Work (b23)	WHAT: Indicators of availability and accessibility of jobs (workplaces). Indicators measuring the quality of the workplaces (e.g. safety and comfort, respect of urbanistic standards, maintenance) WHY: The availability or accessibility in a reasonable commuting time of job opportunities is a pre-requisite to participate in the labour market. The quality of the workplaces influences the quality of employers'/employees' life.	Labour market accessibility (accessibility to jobs)	It aims to represent the accessibility of jobs using as a proxy the amount of people living within four hours of driving from the location at hand	More information would be needed in relation to quality perception or satisfaction with the accessibility, availability and quality of jobs.
		Consumption (b24)	WHAT: Indicators of availability and accessibility of shops and other services (e.g. entertainment) and online delivery. Indicators measuring the quality of the consumption places (e.g. safety and comfort, respect of planning standards, maintenance) WHY: The availability and accessibility in a reasonable time threshold of shops and service facilities influence the range of consumption choice. The same for the availability of fast online deliveries.	Accessibility to commercial services (shops and banks)	It aims to represent the accessibility to consumption using as a proxy the percentage of area cathegorized as "highly accessible" to shops and banks	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception or satisfaction with the accessibility, availability of consumptios places (shops, entertainment…)
		Public spaces (b25)	WHAT: Indicators of availability and accessibility of public spaces. Indicators measuring the quality of the public spaces' maintenance. WHY: Good public spaces facilitate social life.	Not relevant at NUTS3 level	Not relevant at NUTS3 level	Not relevant at NUTS3 level
		Cultural Assets (b26)	WHAT: Indicators of availability, accessibility, and affordability (prices) of cultural assets (e.g. heritage sites, museums etc.). Indicators measuring the usage and the quality of the cultural assets' maintenance. WHY: The availability and accessibility in a reasonable time threshold of cultural assets and options widen the range of quality of life experiences.	Availability of cultural landmarks (Unesco World Heritage)	It aims to represent the availability of cultural spots	The indicators used focus on quantity of services available due to data availability. More information would be needed in relation to quality perception or satisfaction with the availability and afordability of cultural spots
				Accessibility to cultural services (cinemas)	It aims to represent the availability of cultural spots	
	Ecological	Green Infrastr		Availability of Natural Areas	It aims to represent the availability of green areas (forests, herbaceous vegetation, wetlands and inland waters)	

			WHAT: At a wider territorial scale, this includes indicators of connectivity of green areas (woods, meadows) and the preservation of the agricultural mosaic. At city level, indicators of Urban Green (urban parks, street trees, gardens....) WHY: Availability of and access to green spots is key for health, sport and relax activities in the city, and to host biodiversity in the environment	Farmland abandonment (% abandoned land)	It aims to represent the deterioration of land using as a proxy the percentage of abandoned land	The indicators used focus on quantity of natural areas available due to data availability. More information would be needed in relation to quality perception or satisfaction with the availability and quaility of green areas and the landscape
		Protected areas (b32)	WHAT: Indicators of availability and accessibility of natural protected areas (i.e. areas where flora, fauna, landscape is preserved, which makes protected areas different from other green infrastructure). WHY: Accessible protected areas augment the opportunities to live in contact with nature.	Existence of Protected Areas	It aims to represent the availability of protected area	The indicators used focus on quantity of protected areas available due to data availability. More information would be needed in relation to quality perception or satisfaction with availability and afordability of protected areas
Life Maintenance	Personal Health and Safety	Personal Health (m11)	WHAT: Objective and subjective outcome indicators of status of personal health, nutrition, physical activity. WHY: Being in and perceiving a good health – body and mind – status is a fundamental quality of life ingredient	Life expectancy at birth	It aims to represent the population health using as a proxy the life expectancy	More information would be needed in relation to the satisfactions and perception of personal health, nutrition or physical performance
		Personal Safety (m12)	WHAT: Objective and subjective outcome indicators of personal security, safety against accidents. WHY: By the same token, living in and/or perceiving to live in a safe place is also fundamental for people's quality of life.	Standarised traffic accident death rate	It aims to represent the road safety	More information would be needed in relation to personal safety perception on different aspects (while driving, at home, on the streets…)
				Standarised homicide death rate	It aims to represent the general safety using as a proxy the homicide death rate	
	Economic and Societal Health	Inclusive Economy (m21)	WHAT: Mostly objective outcome indicators related to unemployment and employment rates, gender employment and salary gap, job security, work dignity, disposable income distribution, inequality of financial/real estate wealth of households (personal saving, house ownership, etc.) WHY: An inclusive economy, low unemployment and high work security and dignity are a key ingredient for people's quality of life. The sub-domain does not include GDP or local productivity indicators, only aspects of earning and wealth distribution, equity, economic cohesion in the territory. Local productivity indicators are obviously important for local/regional development strategies, but the TQoL "inclusive economy" indicators focus on the spill-over of economic progress in terms of benefits for the citizens. They are complementary to GDP measurement – an orthogonal, not a collinear factor.	Household disposable income per capita	It aims to represent the disposable income	More information would be needed in relation to job security, work dignity, personal savings…
				Gender employment gap	It aims to represent the job equity	
				Unemployment rate	It aims to represent the employment performance	
		Healthy Society (m22)	WHAT: Mostly objective outcome indicators related to social disparities (population at risk of poverty, working poor families, social security coverage, work-life balance). WHY: A healthy and not too unequal society influences the quality of life by reducing sources of stress and tensions	People at risk of poverty rate	It aims to represent the financially vulnerale population	More information would be needed in relation to social security coverage and work-life balance.
				Early Leavers from education (18-24)	It aims to represent the educational level of the population	
				Tertiary Educational Attainment (25-64)	It aims to represent the educational level of the population	
				NEET 15-24	It aims to represent the educational/labour level of the population	
	Ecological Health	Healthy Environment (m31)	WHAT: Objective and subjective outcome indicators related to the status of the environment (air quality, water quality, noise pollution, soil contamination) WHY: A healthy environment prolongates life expectancy, reducing morbidity, and influences the subjective well-being of people	Air Quality	It aims to represent teh air quality using as a proxy an air index that considers the main pollutants (PM, NOx and SOx)	More information would be needed in relation to quality perception or satisfaction with air and noise pollution, water quality and soil contamination.
		Climate change (m32)	WHAT: Objective and subjective outcome indicators related to greenhouse gases emissions, decarbonisation of the economy (economic activities, public and individual transport, housing, etc.), vulnerability, presence and persistence of risks, adaptation and access to Disaster Risk Reduction (DRR) policies and means (resources, plans, protection infrastructures), awareness and climate-friendly behaviour. WHY: Less greenhouse emissions contribute to reduce the climate change risks for the present and future generations. Resilience to extreme events is fundamental to reduce people vulnerability and exposure to the harmful effects of climate change. Climate-friendly awareness will bring more sustainable consumption habits and lifestyles.	Aggregate expected impact of climate change by 2070	IT aims to represent the impact of climate change	More information would be needed in relation to quality perception or satisfaction with aspectes related to decarbonation of the economy, GHE and access to disaster risk reduction policies, among others.
				Population covered by Sustainable Action Plans	It aims to represent the resilience to climate change using as a proxy the population covered by Sustainable Action Plans	

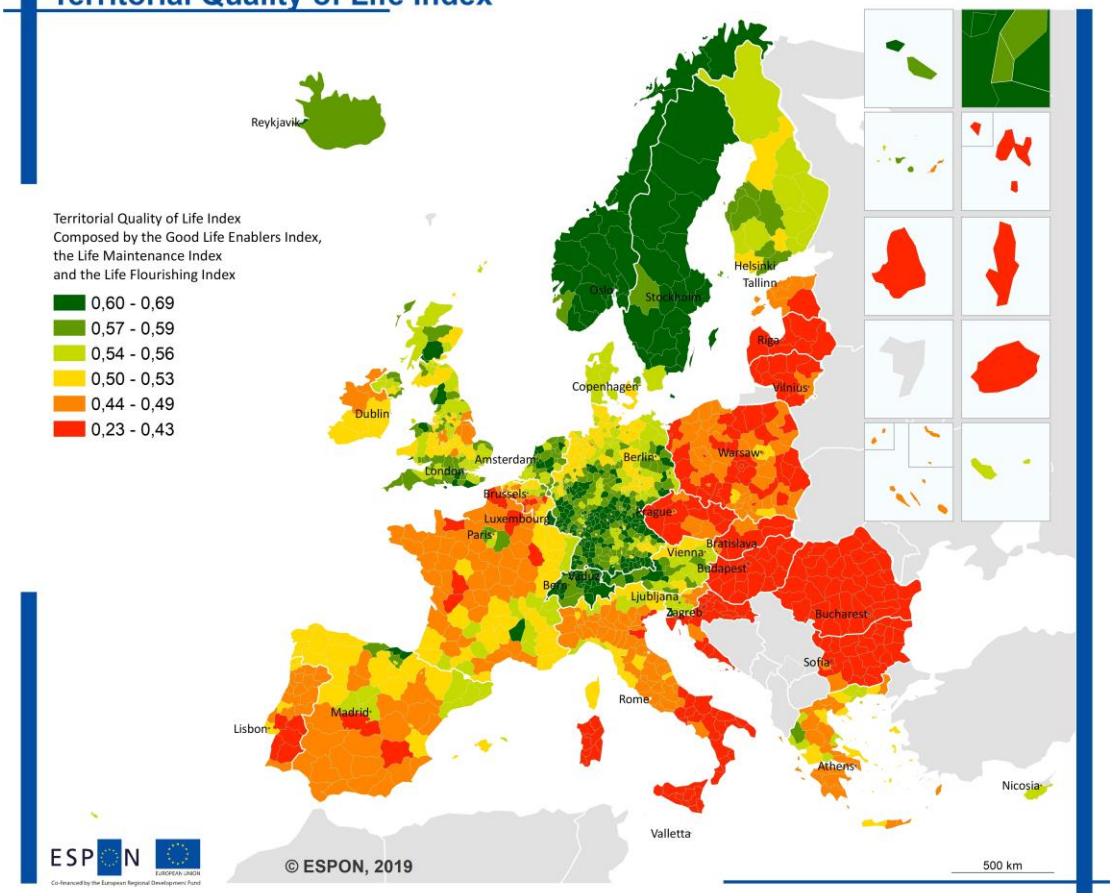
Life Flourishing	Personal Flourishing	Self-esteem (f11)	WHAT: Mostly subjective outcome indicators related to recognition and respect from others and of self-respect. Social tolerance (e.g. respect for minorities, disabled, LGBT). WHY: Self-esteem is a pre-requisite for living a good life	Standardised suicide death rate	It aims to represent the self-respect using as a proxy the suicide death rate	More information would be needed in relation to social tolerance about different aspects (minorities) and the self-perception.
				Attitudes toward people with disabilities	It aims to represent the tolerance to others using as a proxy a survey about the tolerance to people with disabiities	
		Self-actualization (f12)	WHAT: Mostly subjective outcome indicators of self-realization of one's full potential (e.g. life satisfaction with jobs, mate acquisition, parenting, utilising, and developing abilities and talents, pursuing goals). Objective labour markets indicators of jobs matching with skills and competences WHY: A purpose-full life is also a key ingredient of a good life.	No data available at NUTS level	No data available at NUTS level	More information would be needed in relation to quality perception or satisfaction with current jobs, civil status (single, in a relationship, married…) and goals achieved.
	Community Flourishing	Interpersonal trust/ societal belonging (f22)	WHAT: Objective and subjective outcome indicators of inter-personal trust (social capital). WHY: The sense of belonging to a community and interpersonal trust influences the quality of life perception and experience.	Population that believe voluntary work is very important	It aims to represent the perception on coomunity activities using as a proxy the voluntary work perception	More information would be needed in relation to quality perception or satisfaction about the local community
				Population participating in associative activities (organitzational work or participatory events)	It aims to represent the population willingness to participate in community activities	
		Institutional trust/ good governance (f21)	WHAT: Objective and subjective outcome indicators of institutional trust (governance). This category includes also active citizens participation as a mean to build or re-build trust in policy making. WHY: Trust in institutions is a key factor for the quality of community life.	European Quality of Government Index	It aims to represent the quality of gorvernment	More information would be needed in relation to quality perception or satisfaction with government institutions (lcoal, regional and national)
				Trust in the Administration	It aims to represent the population perception on the administration	
				Quality and accountability of government services	It aims to accountability of government services	
				Corruption Index	It aims to represent the corruption level	
	Ecological Flourishing	Biodiversity Wealth (f31)	WHAT: Indicators measuring the quantity and variety of ecosystems services in the territory sustaining quality of life perpetuation for all living species (biodiversity). WHY: The quantity and quality of ecosystem services is key to ecological flourishing, and indirectly to preserve people health and reduce the risks of pandemic outbreaks. The world of living subjects offers a web of dynamics, living and unfolding creative relationships for constant development.	Invasive Alien Species	It aims to represent the ecosystem quality using as a proxy the number of invasive alien species	More information would be needed in relation to quality perception or satisfaction with biodiversity and policies aiming to preserve the ecosystems
				Ecosystem services net value (Suppy-Demand)	It aims to represent the value of the ecosystems	

These indicators have been selected after a detailed assessment of the QoL related data availability for all NUTS3 regions in Europe, as illustrated extensively in the project Intermediate Report.

2.2 TQoL Global Index

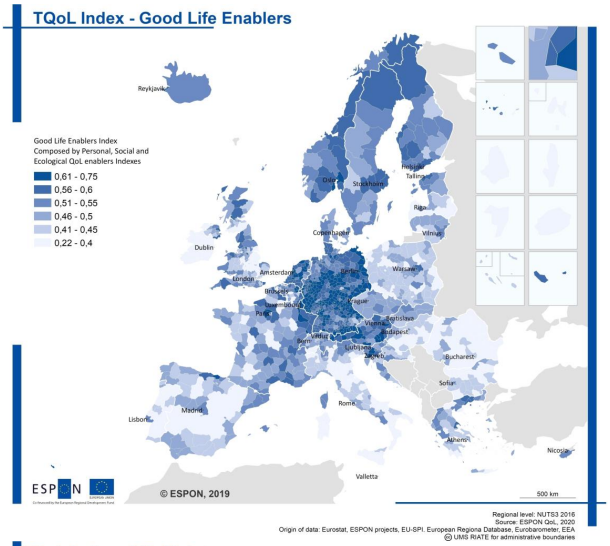
The following maps show the results of the TQoL composite index methodology at European level, displaying first the map for the aggregate TQoL composite index (all three dimensions combined), followed by the maps for each dimension separately – good life enablers, life maintenance, life flourishing. Next, each of the 9 domains and 21 sub-domains composing the 3 dimensions are also displayed.

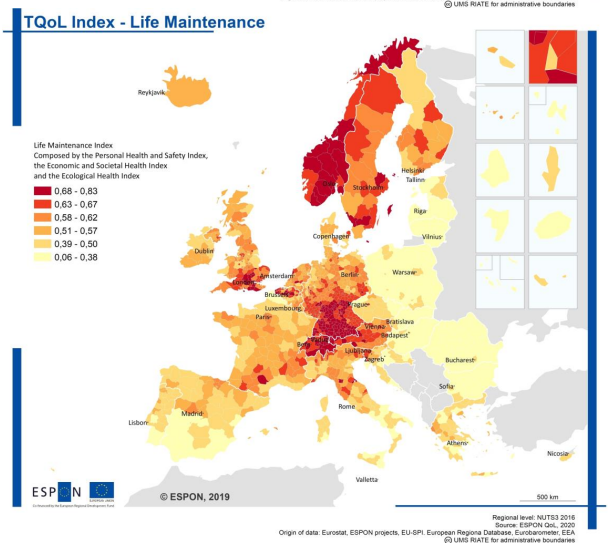
Territorial Quality of Life Index

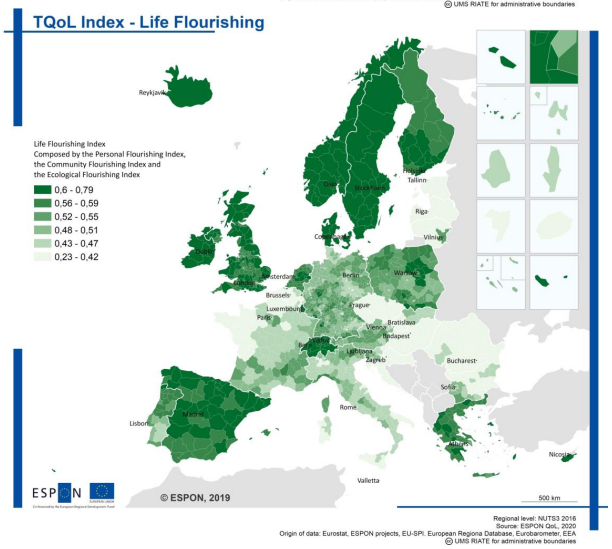


Regional level: NUTS3 2016
Source: ESPON QoL, 2020
Origin of data: Eurostat, ESPON projects, EU-SPI. European Regiona Database, Eurobarometer, EEA
(cc) UMS RIATE for administrative boundaries

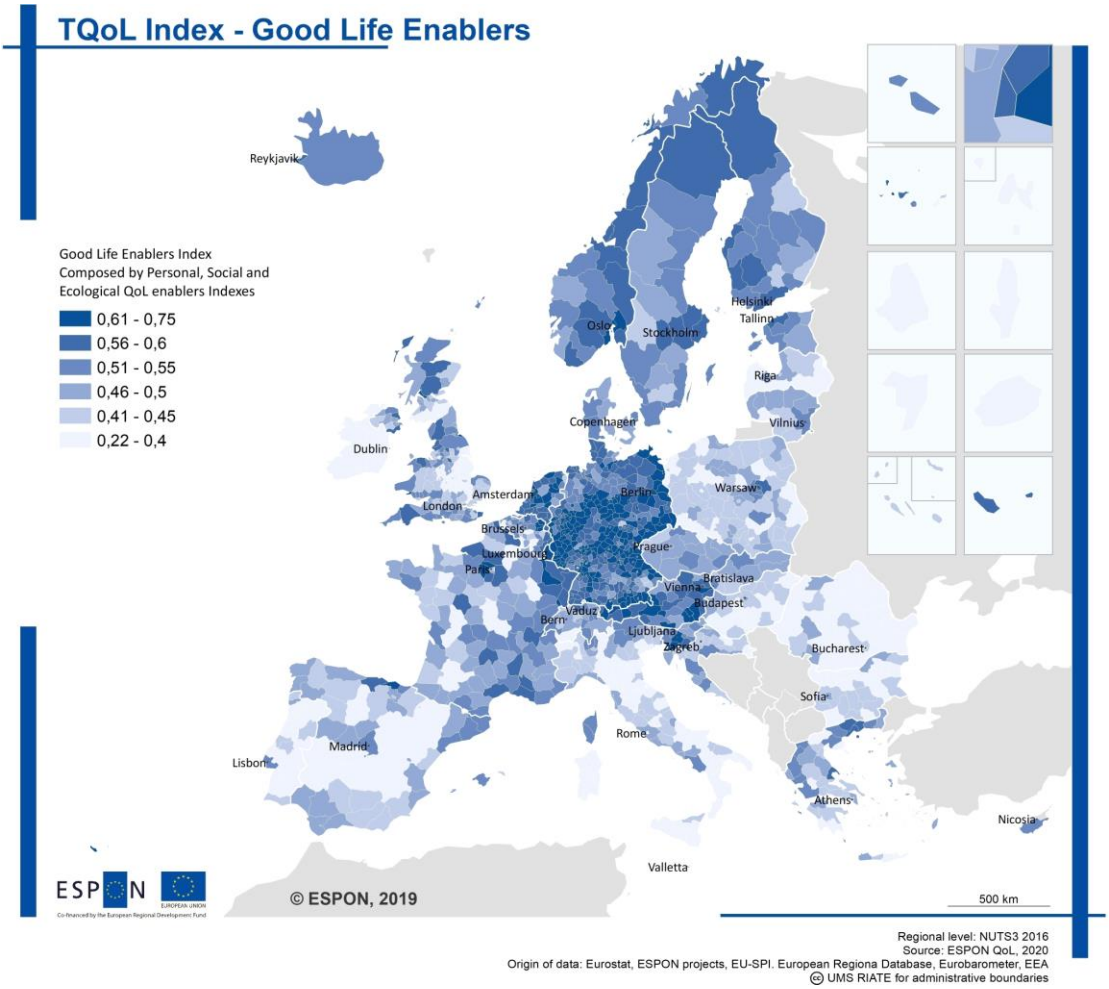
Dimensions: Good life enablers, Life maintenance, Life flourishing



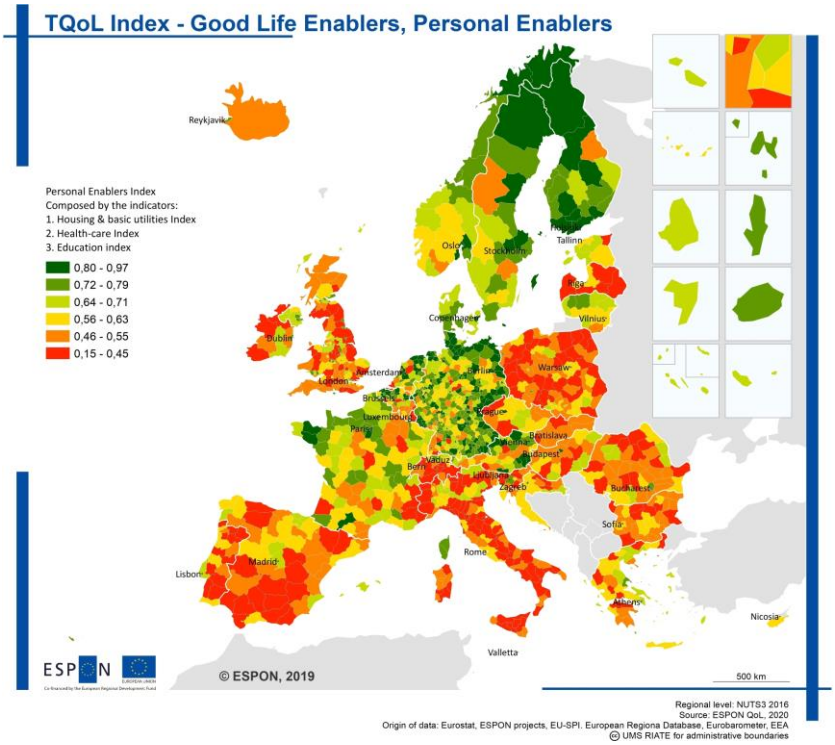




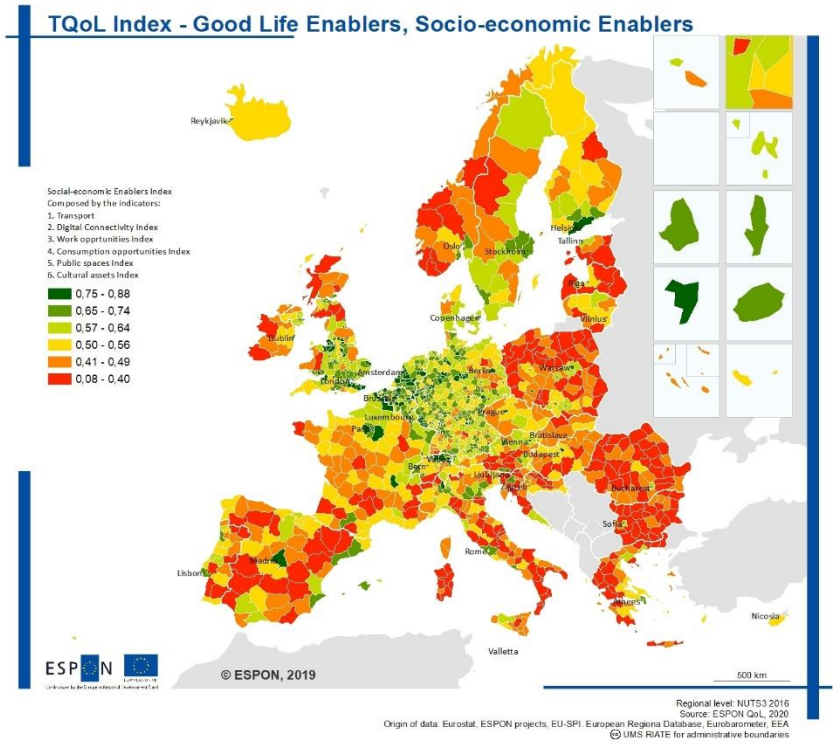
2.3 Good Life Enablers Dimension



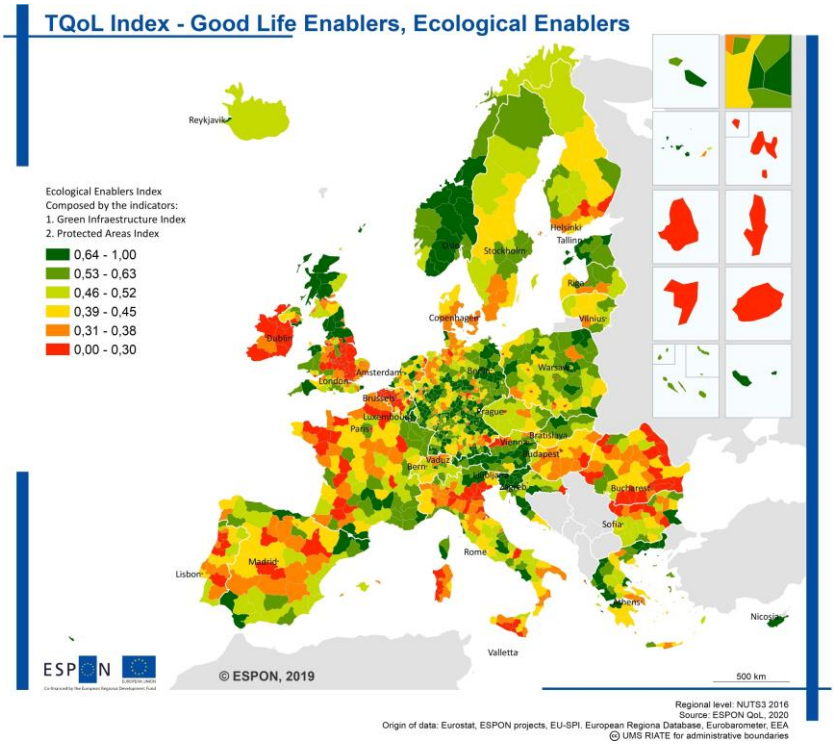
2.3.1 Personal Enablers domain



2.3.2 Socio-economic enablers domain

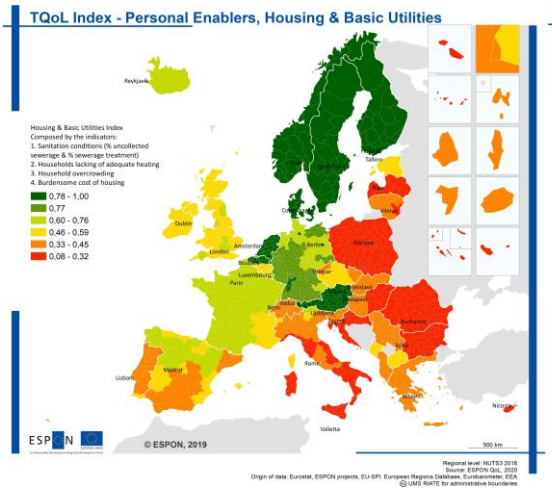


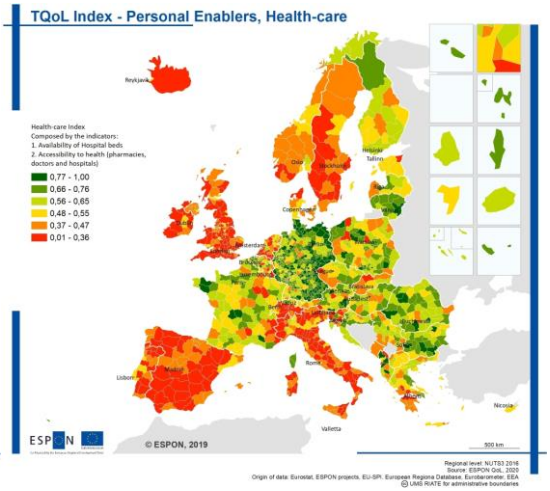
2.3.3 Ecological enablers domain

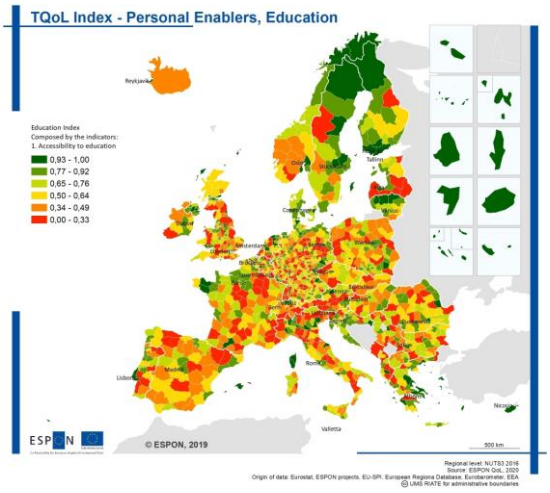


2.3.4 Sub-domains

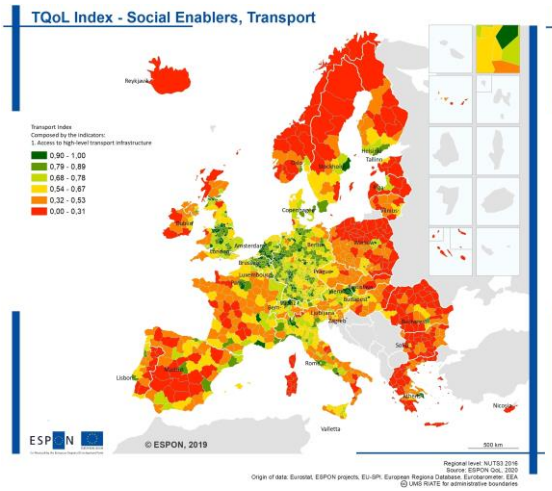
Personal

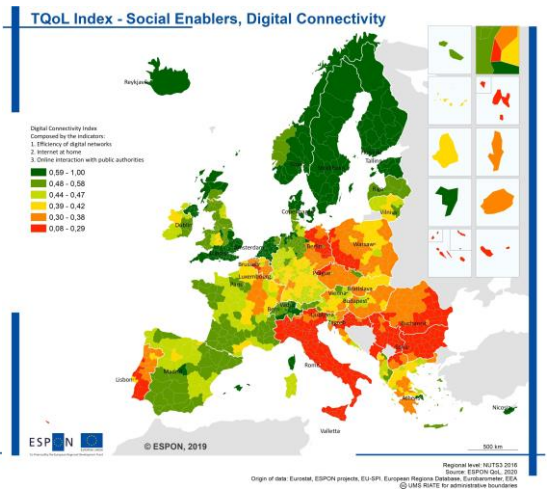


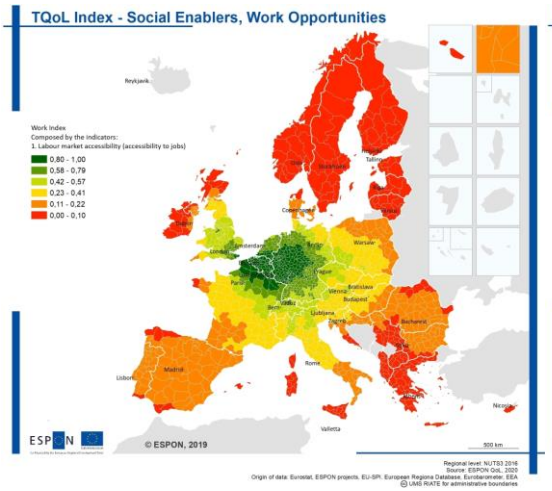


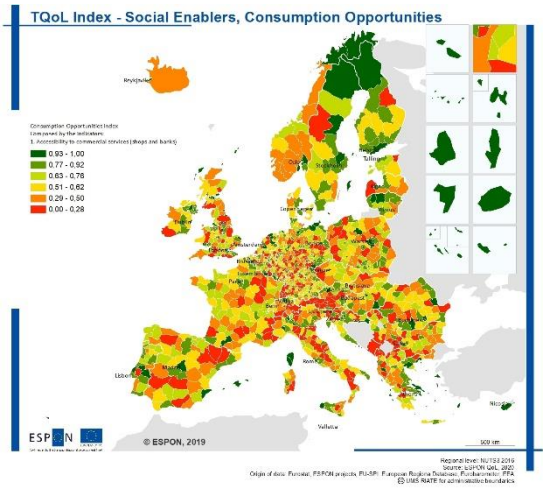


Socio-economic

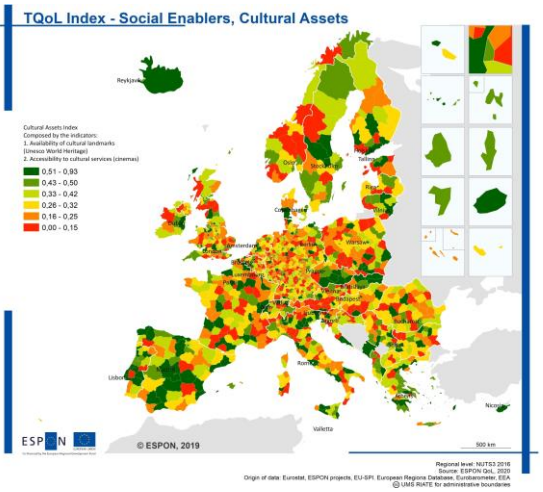




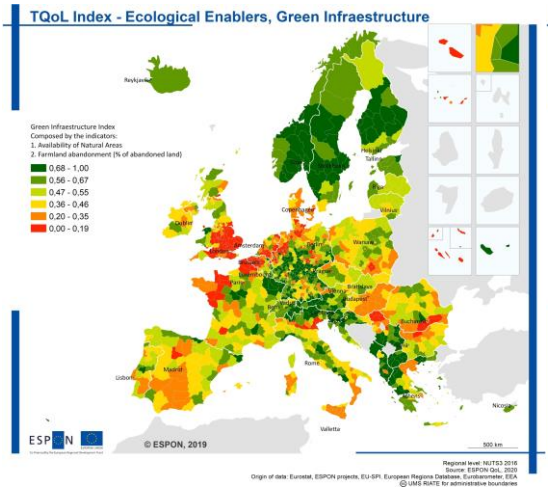


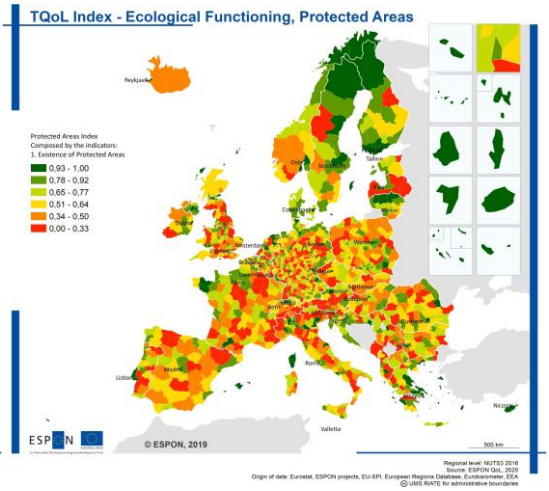


Public Spaces
(no data at NUTS level)

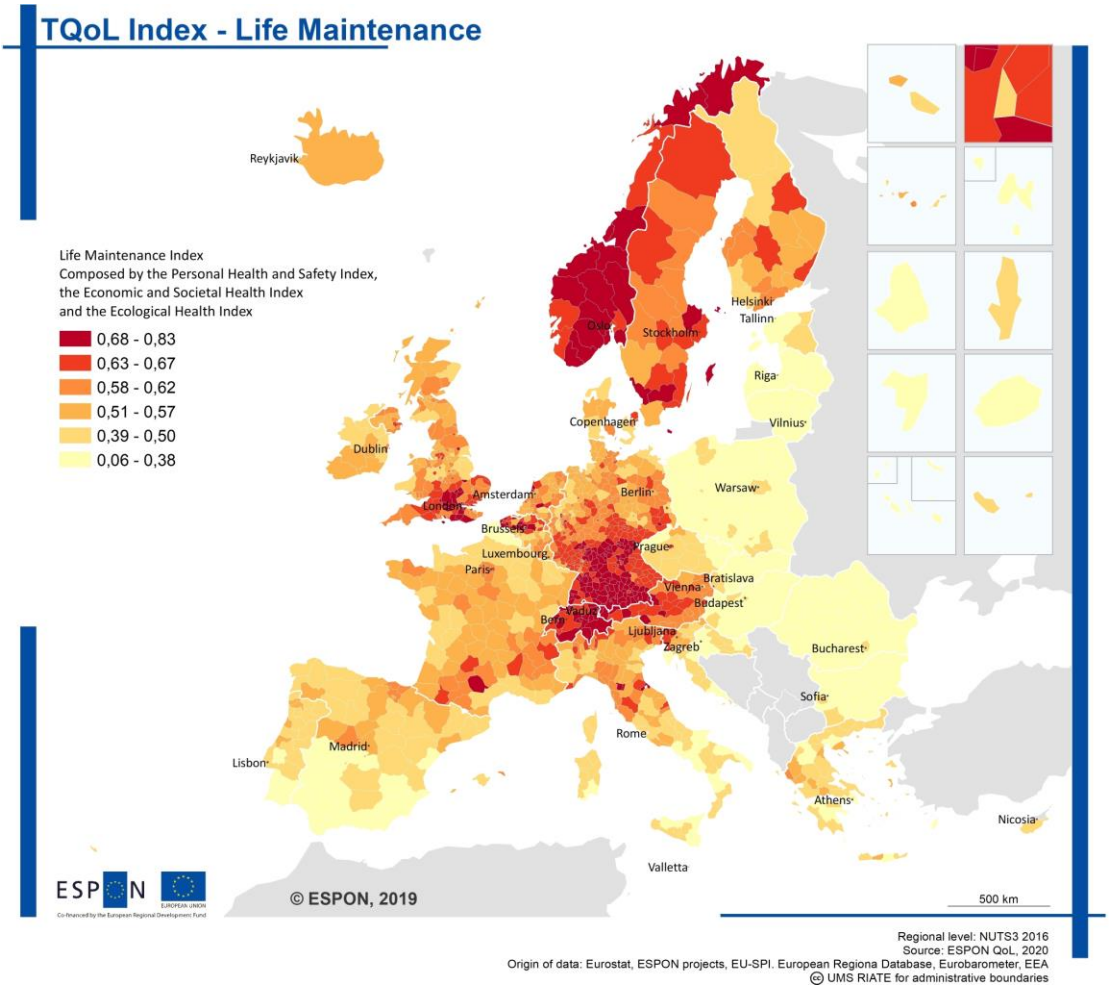


Environmental

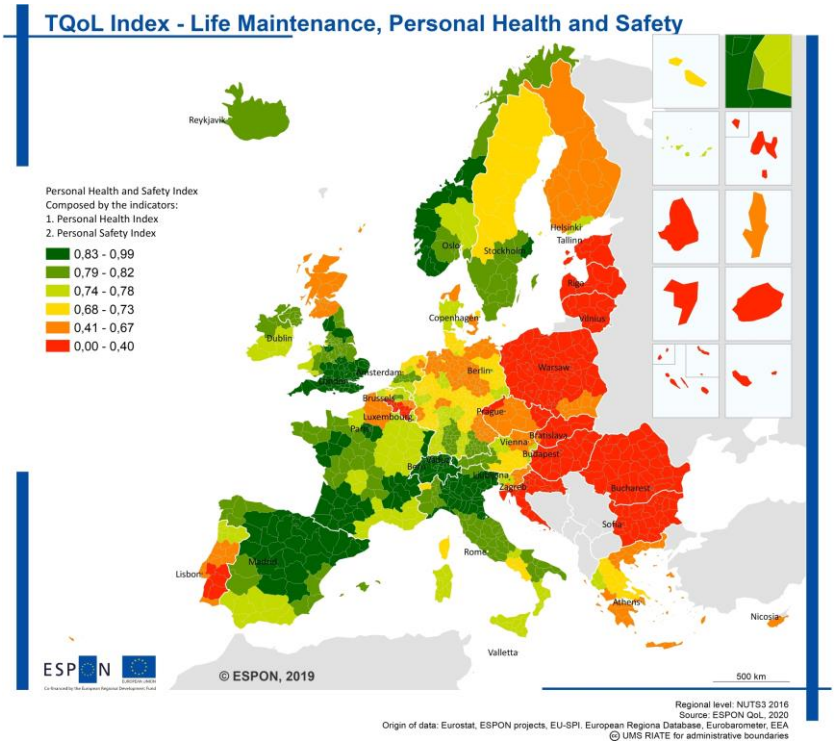




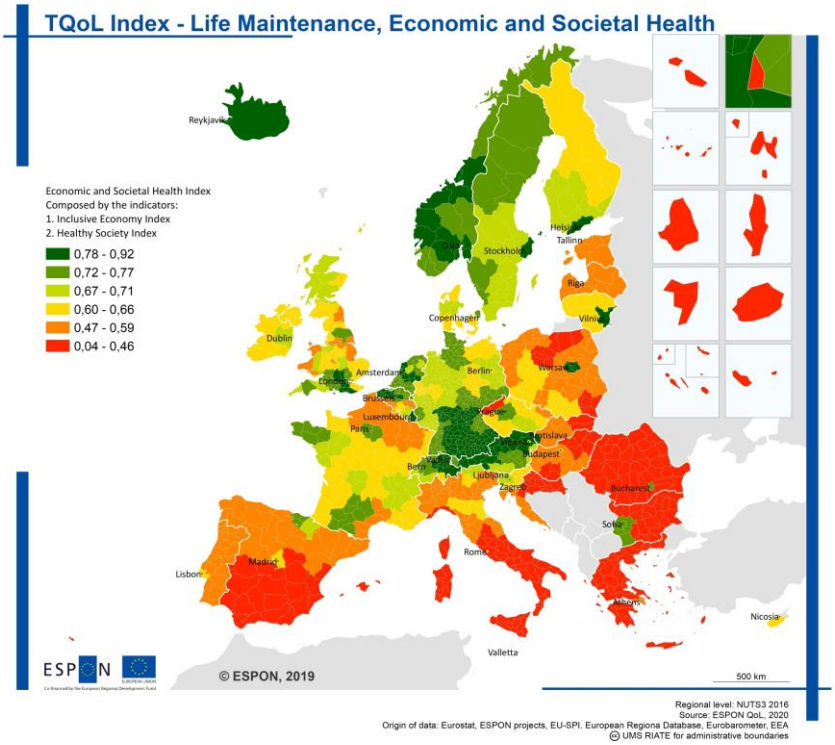
2.4 Life Maintenance Dimension



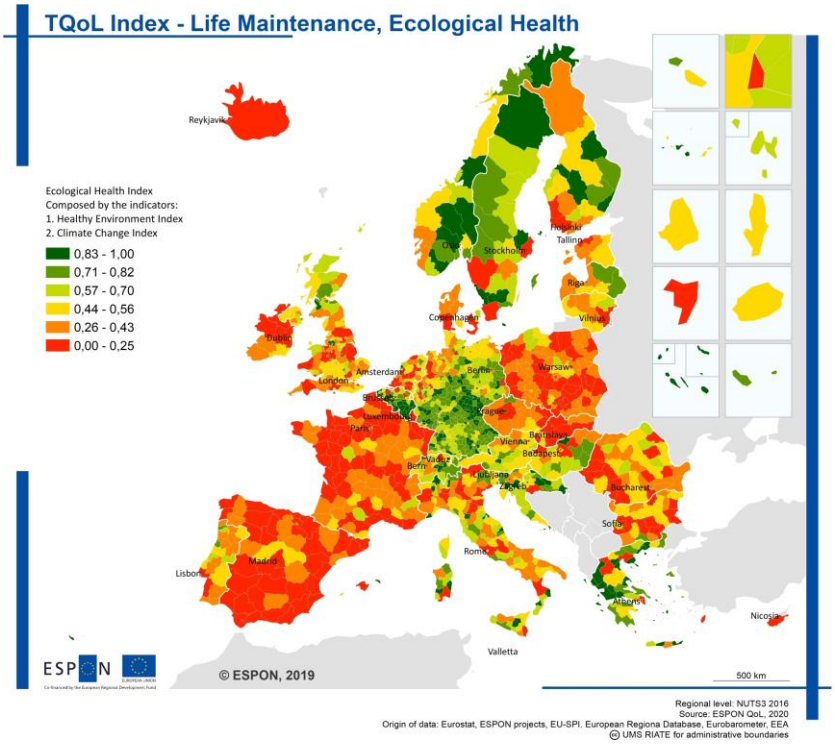
2.4.1 Personal Health and Safety domain



2.4.1 Economic and Societal Health domain

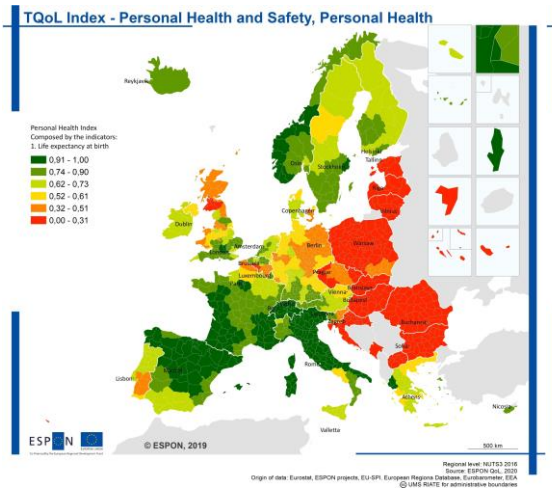


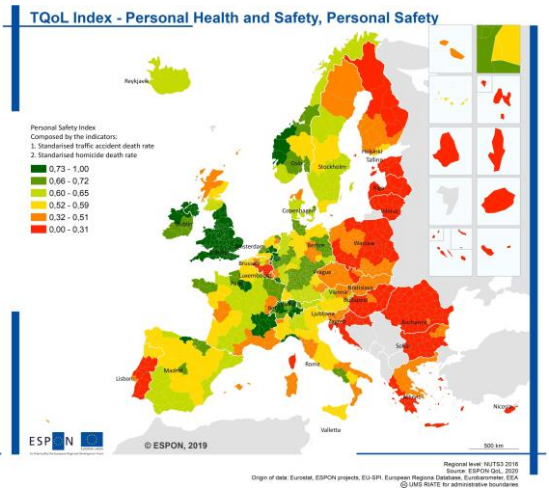
2.4.1 Ecological Health domain



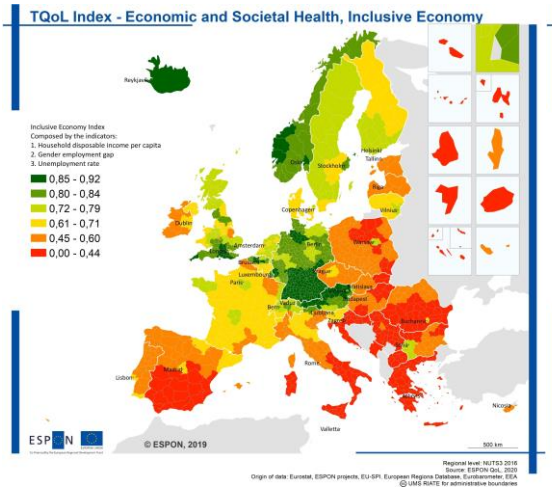
2.4.2 Sub-domains

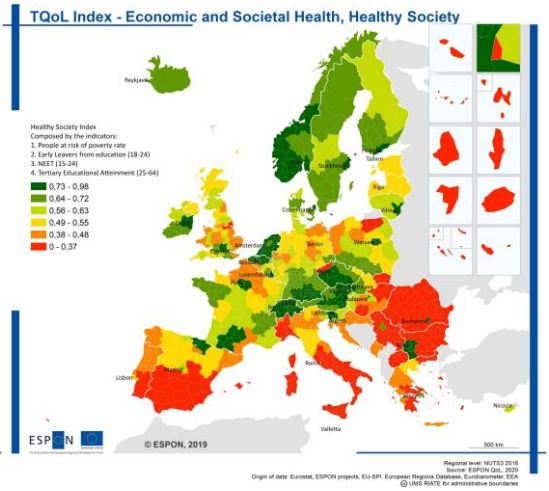
Personal



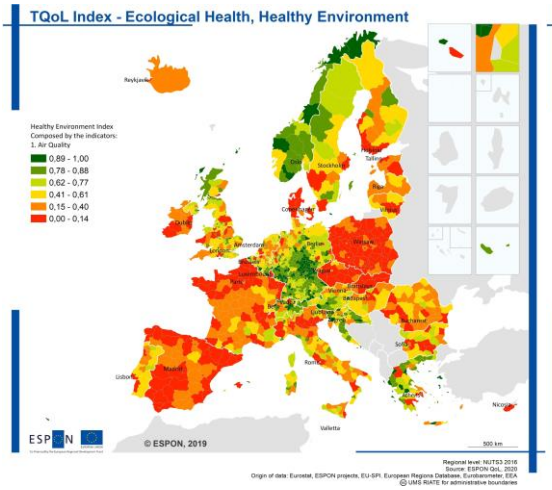


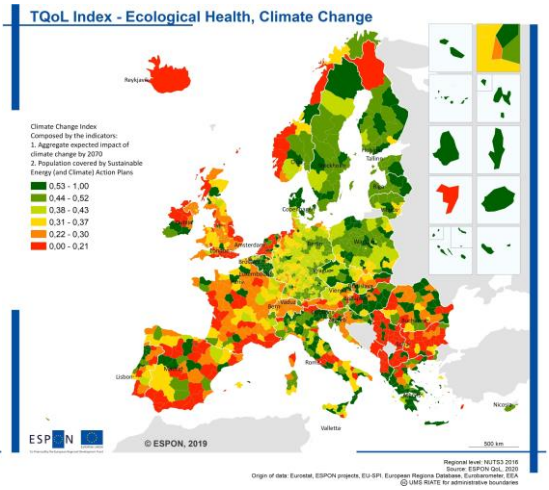
Socio-economic



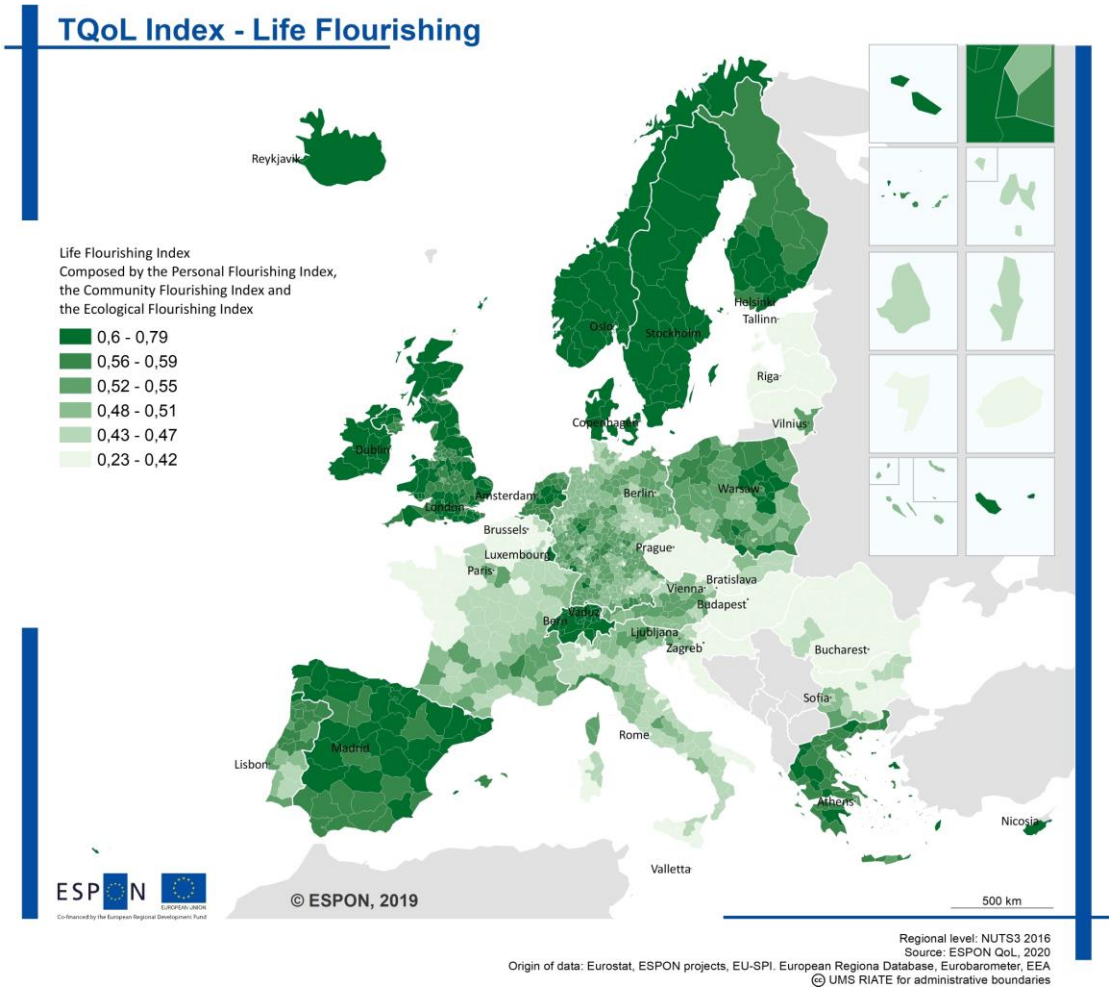


Environmental

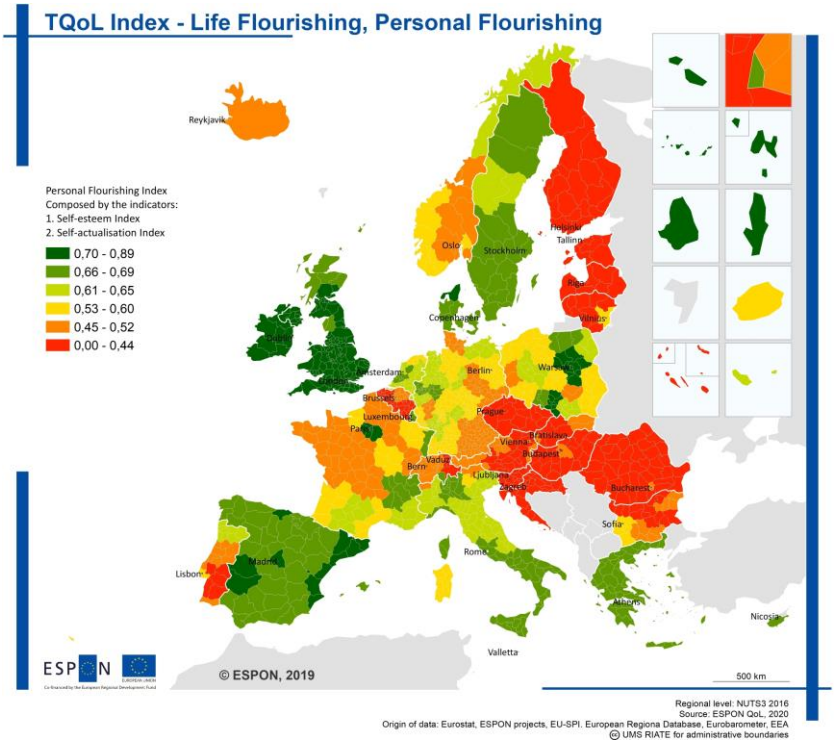




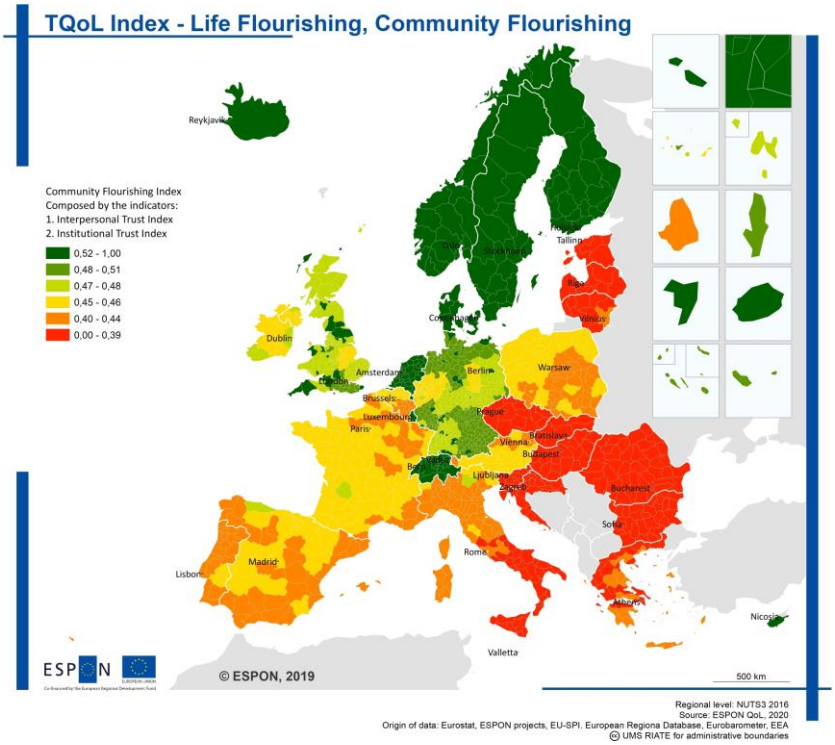
2.5 Life Flourishing Dimension



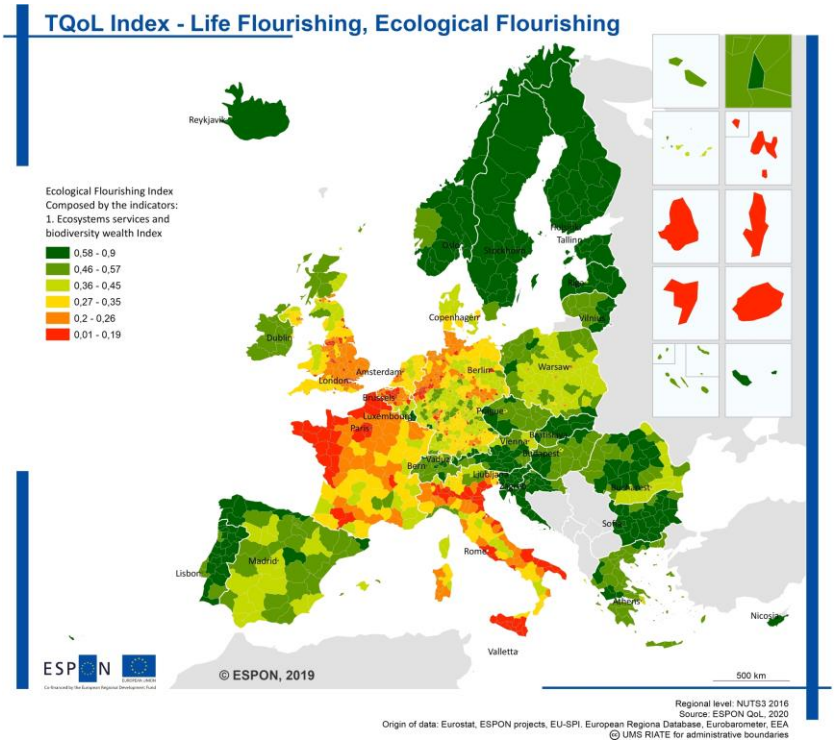
2.5.1 Personal Health and Safety



2.5.2 Community Flourishing domain

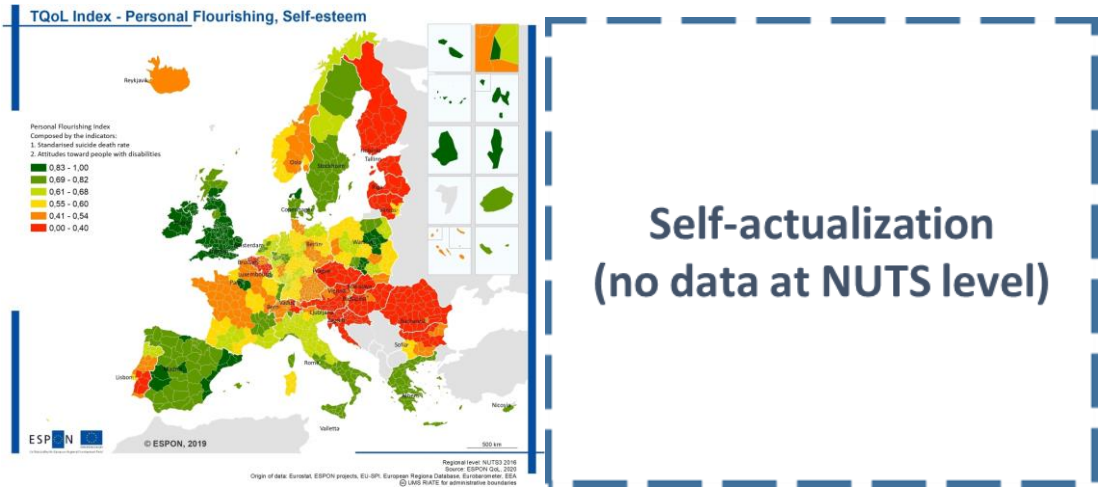


2.5.3 Ecological Flourishing domain

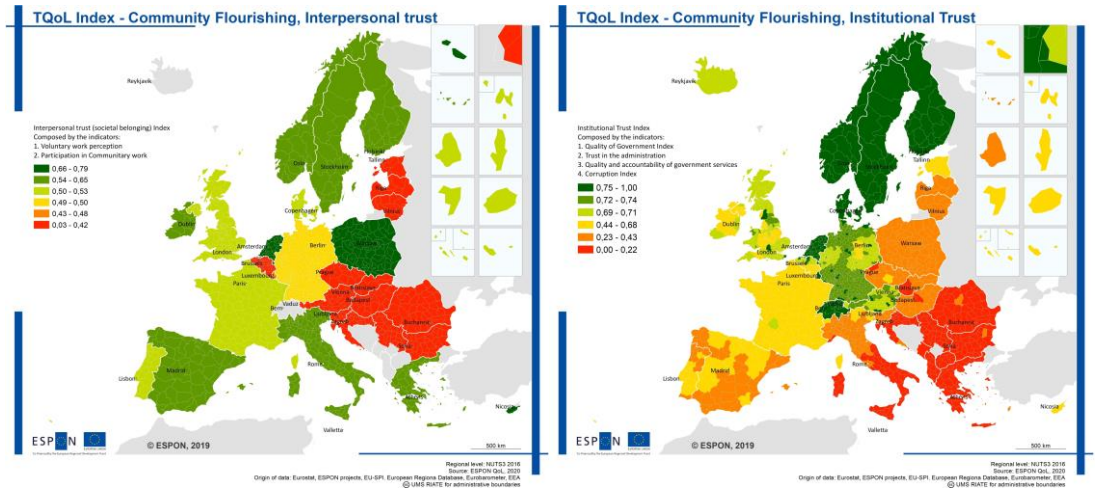


2.5.4 Sub-domains

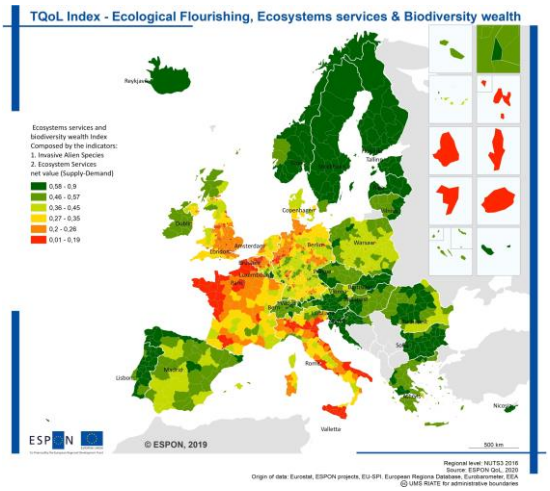
Personal



Socio-economic



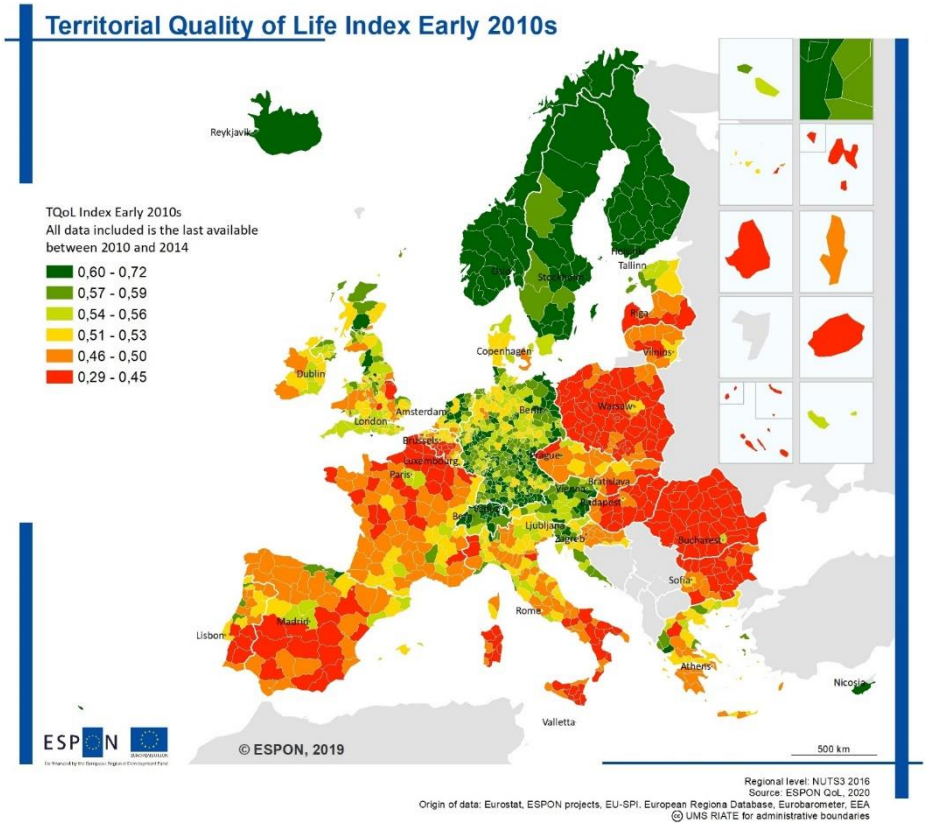
Environmental

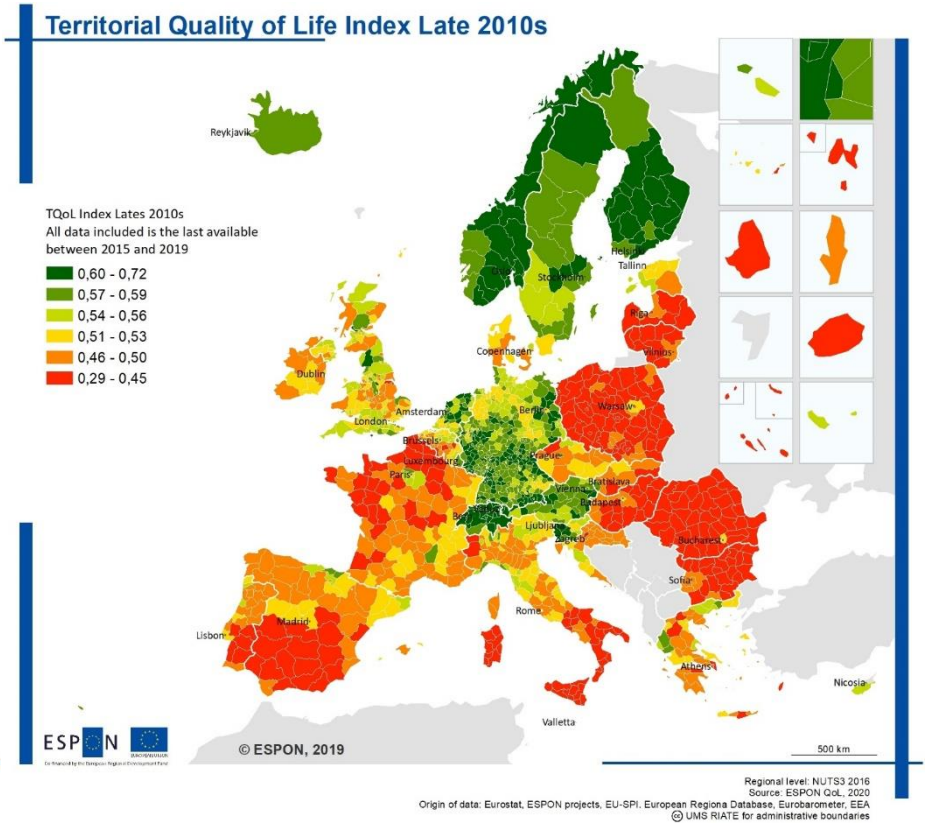


2.6 Quality of Life evolution over time mapping

2.6.1 TQoL Index Early 2010s vs Late 2010s

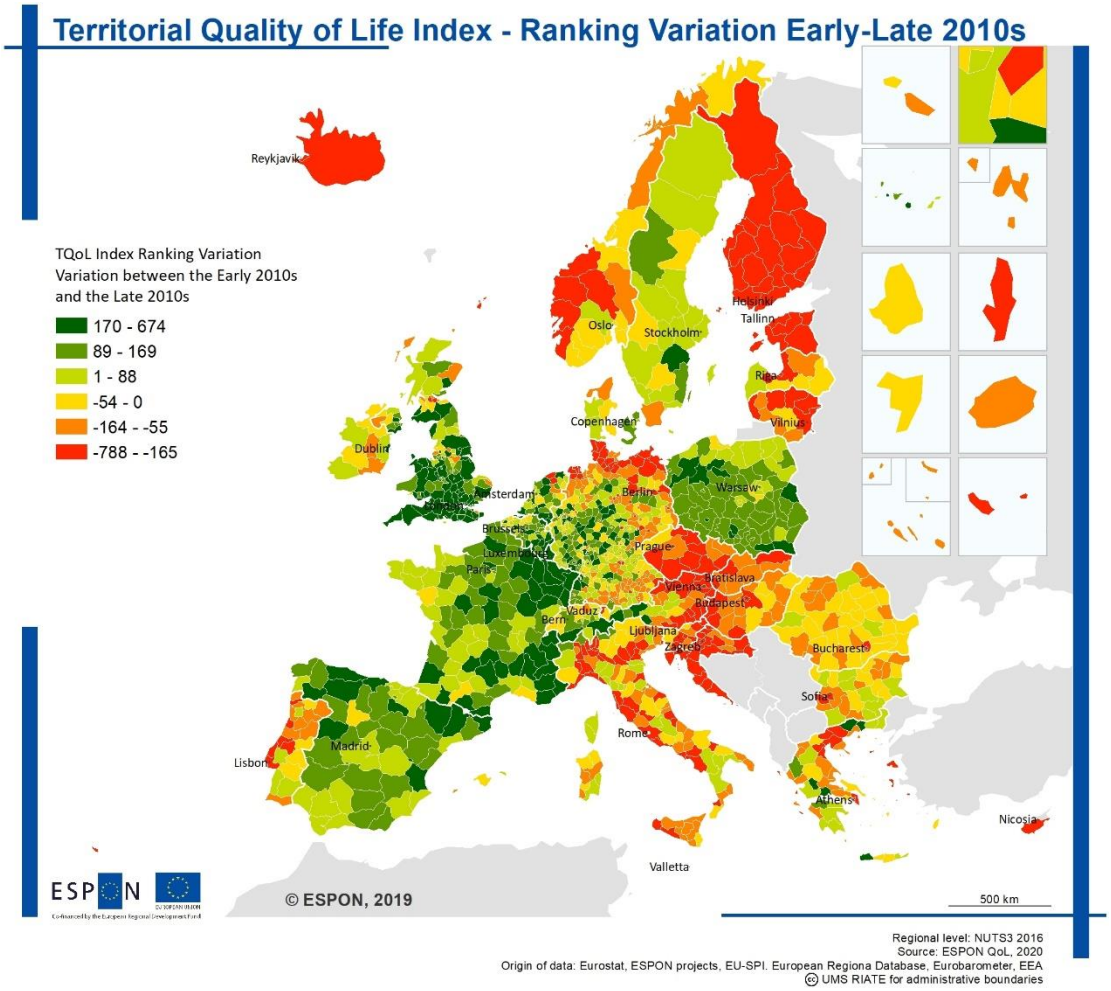
Next, quality of life is depicted for 2010 (left map) compared current quality of life as already presented before (right map).

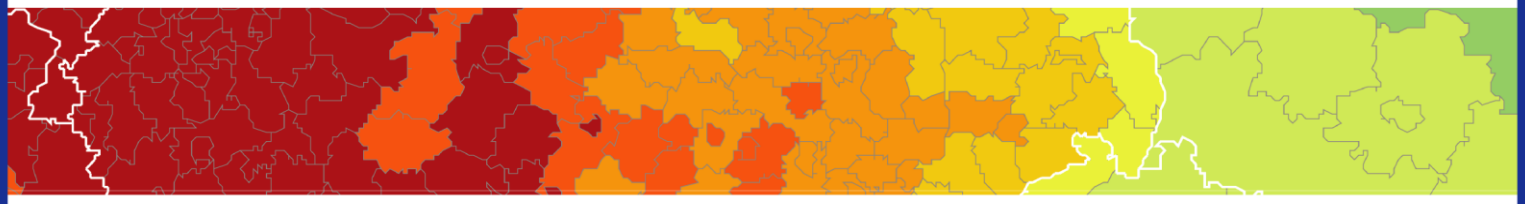




2.6.2 Ranking variation Early-Late 2010s

Next map shows regions that climbed relative positions in the TQoL Index ranking over the last decade. Regions depicted in yellow-red dropped relative positions in the ranking, Regions in green climbed positions.





ESPON 2020 – More information

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