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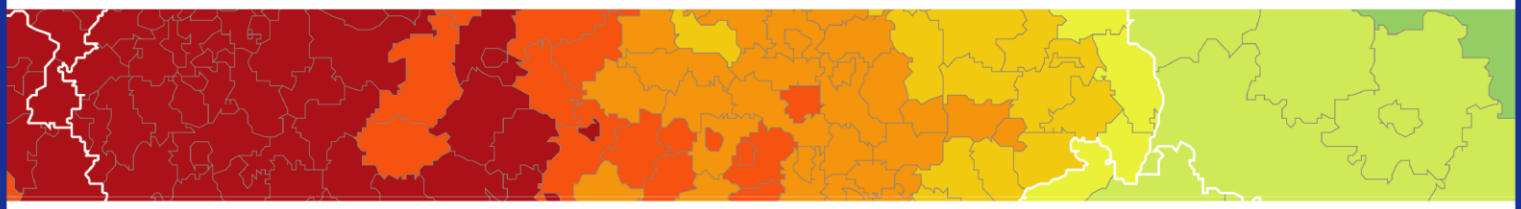

SDG localising tool:

Inception Report

Inception Report

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

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Inception Report

SDG localising tool: Localising and measuring Sustainable Development Goals in cities and regions

Version 10/01/2020

Disclaimer:
This document is an inception 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

EC	European Commission
ESPON	European Territorial Observatory Network
ESPON EGTC	ESPON European Grouping of Territorial Cooperation
EU	European Union
NUTS	Nomenclature of Territorial Units for Statistics
SDGs	Sustainable Development Goals

1 Introduction

The inception report sets the basis for the development of the SDGs localising tool in terms of the choice of indicators per SDG and the functionalities of the tool. It is composed of three main sections.

The first section (chapter 4) describes the SDGs at regional level. It presents the regional SDG indicators by SDG goal, describes the approach in setting the targets, the calculations to summarise data, the data gaps and territorial typologies to group regions for benchmarking purposes.

The second section (chapter 5) describes the stakeholders' involvement in validating the indicator framework and in co-designing/testing the SDG localising tool.

The third section (chapter 6) provides wireframes of the SDG localising tool and an explanation of the functionalities we propose to include along with other technicalities.

Before detailing the aforementioned sections the objective and overall approach are described briefly.

2 Objective

The project aims to develop and implement a Sustainable Development Goal (SDG) localising tool in the form of a web application that offers support to regional and national governments in localising and achieving the SDGs.

A simple, intuitive and user-friendly application can inform stakeholders on regional disparities and inequalities and urge regional and national governments in all the countries participating in the ESPON 2020 Cooperation Programme to include the SDGs in local development plans and step-up actions.

The result will inform regional, and national policy-makers and citizens alike on SDG-related policy areas.

3 Approach

The SDGs localising tool will present indicators to measure and monitor the SDGs at the regional level. In the sections that follows we describe the high level approach in building the indicator framework for regions.

Indicator framework: For the framework at NUTS 2 level we will adopt Eurostat's SDGs reference indicator framework, which is used to monitor progress towards the SDGs in the EU context and particularly at the national level.[1] This framework and associated indicator set is the result of a consultative process involving Commission services, Member States, Council Committees, users, NGOs, academia and international organisations. The initial set of indicators was adopted in April 2017 by the Working Group on SDG-related reporting of the Commission Services, mandated by the Inter Service Steering Group on SDGs, and received the favourable opinion of the European Statistical System Committee (ESSC) in May 2017. The criteria used for selecting indicators are policy relevance, admissibility requirements and quality grading. The framework limits the maximum number of indicators for each SDG to six, with it also being possible to have "multi-purpose indicators" to monitor progress towards more than one SDG. The Eurostat approach allows for new indicators to replace existing indicators, provided they better meet the criteria.

However, since the Eurostat framework applies at national level we will validate the proposed framework for its relevance at the regional level by consulting the approach of the OECD in its recently published report "A Territorial Approach to the Sustainable Development Goals" (henceforth referred to as the OECD report) and by piloting the proposed framework with three EU regions.

Indicators: For the selection of indicators to be included in the SDGs localising tool we will start by reviewing Eurostat's SDGs & me approach and identify indicators at the regional level. When the national indicator is not available or not relevant at regional level, alternative indicators will be proposed. We will thus at the same time consult the indicators of the OECD report and the regional EU Social Progress Index (EU – SPI). The underlying concepts of the EU – SPI and its twelve-component structure strongly relate to the concepts of all 17 SDGs.

Tool: The tool will contribute to the accessibility of indicators and information to localise the SDGs, to measure progress of the SDGs in regions and reflect differences across regions in Europe. The overall technical objective is to create a modern and user-friendly web system by following the latest online standards in web development. More specifically, our aim is to: keep the highest standards of user-friendliness;visually attract online visitors; enhance the process of transferring good practices by providing space for an easy information dissemination.

[1] https://ec.europa.eu/eurostat/documents/276524/9479054/2019-01-08__EU_SDG_indicator_set_2019_review_final_report.pdf

4 SDGs at regional level

4.1 Proposed Indicators

4.1.1 SDG Indicators

The proposed indicators are listed in Table 1 by SDG.

Table 1 Proposed list of indicators at NUTS 2 level

Goal	Indicator	Source
Goal 1	People at risk of poverty or social exclusion	SILC
Goal 1	In work at-risk-of-poverty rate	SILC
Goal 1	Satisfaction with housing: Percentage of people who feel satisfied with the dwelling they live in EU SILC	SILC
Goal 1	Lack of adequate heating: Percentage of people who are in the state of enforced inability to keep home adequately warm (EU SILC)	MPI
Goal 1	Overcrowding: Percentage of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation (EU SILC)	MPI/European Quality of Institutions Index and DG Regio own computations
Goal 2	Insufficient food	EU SILC
Goal 2	Structural funds Thematic Objective 1: Research & Innovation : Farm performance & New Farmers (SF)	ESS (GBAORD)
Goal 2	Organic farming: selected variables by size of farm (UAA) and NUTS 2 regions [ef_so_mporg]	ESS,
Goal 2	Manure storage facilities by NUTS 3 regions	EEA
Goal 3	Life expectancy at birth by sex	ESS
Goal 3	General health status: Proportion of persons who assess their health to be very good or good to the question on self-perceived health ('How is your health in general?')	EU SILC
Goal 3	Death rate due to tuberculosis, HIV and hepatitis by sex (sdg_03_41)	EUROSTAT
Goal 3	Self-reported unmet need for medical examination and care by sex (sdg_03_60)	SILC
Goal 4	Early leavers from education and training by sex	EUROSTAT
Goal 4	Tertiary educational attainment, age group 25-64 by sex and NUTS 2 regions	EUROSTAT
Goal 4	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions [edat_lfse_33]	EUROSTAT
Goal 4	Participation rates of selected age groups in education at regional level (educ_uoe_enra14)	EUROSTAT
Goal 4	Young people neither in employment nor in education and training by sex (sdg_08_20)	EUROSTAT
Goal 5	Difference between female and male employment rates	ESS (LFS), EUROSTAT and DG Regio own computations
Goal 5	Students enrolled in tertiary education by education level, programme orientation, sex and NUTS2 regions (educ_uoe_enrt06)	EUROSTAT
Goal 5	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions (edat_lfse_33)	EUROSTAT
Goal 5	Early leavers from education and training by sex (sdg_04_10)	ESS (LFS)
Goal 6	Bathing sites with excellent water quality by locality	EEA
Goal 6	Population connected to wastewater collection and treatment systems by river basin district (RBD) (env_wwcon_rb)	EUROSTAT
Goal 6	Satisfaction with water quality	Gallup
Goal 6	Lack of toilet in dwelling	EU-SILC
Goal 6	Sewage treatment	EEA
Goal 7	Household energy consumption per capita	ESPON LOCATE project (1)
Goal 7	Carbon footprint of household consumption	EXIOBASE
Goal 7	Inability to keep home adequately warm (percent of households) (ilc_mdes01	EU-SILC
Goal 8	Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions (TGS00005)	EUROSTAT
Goal 8	Employment rates by sex, age, educational attainment level, citizenship and NUTS 2 regions	EUROSTAT
Goal 8	Long-term unemployment (12 months and more) by NUTS 2 regions	EUROSTAT
Goal 8	In work at-risk-of-poverty rate (sdg_01_41)	SILC

Goal	Indicator	Source
Goal 9	Intramural R&D expenditure (GERD) (rd_e_gerdreg)	EUROSTAT
Goal 9	Total R&D personnel (rd_p_persreg)	EUROSTAT
Goal 9	Equipment rate for public transport vehicles (number of motor coaches, buses and trolleybuses per 1000 inhabitants) (tran_r_vehst, road_eqs_busveh, demo_r_d2jan)	EUROSTAT
Goal 10	Disposable income of private households by NUTS 2 regions (tgs00026)	EUROSTAT
Goal 10	Disposable income of private households by NUTS2 regions relative to national average (based on tgs00026)	EUROSTAT
Goal 10	People at risk of poverty or social exclusion by NUTS 2 regions (ilc_peps11)	SILC
Goal 11	Overcrowding rate by poverty status	EU-SILC
Goal 11	Settlement area per capita	SILC & LUCAS
Goal 11	Victims killed in road accidents by NUTS2 regions [tran_r_acci]	DG MOVE
Goal 11	air pollution - pm2.5	EEA
Goal 12	Municipal waste by NUTS 2 regions - pilot project data (env_rwas_gen)	Eurostat
Goal 12	Final energy consumption by households and business	ESPON LOCATE Project (1)
Goal 12	Uncollected sewage	EEA
Goal 13	Air pollution-pm10 Air pollution - pm2.5 Air pollution - ozone	EEA, DG REGIO
Goal 13	Carbon footprint of household consumption	EXIOBASE (2)
Goal 14	Surface of marine sites designated under NATURA 2000	EEA
Goal 14	Bathing sites with excellent water quality	EEA
Goal 15	Share of forest area	Eurostat (LUCAS)
Goal 15	Land covered by artificial surfaces by NUTS 2 regions	EEA
Goal 15	Protected land (nNatura 2000)	EEA
Goal 16	Crimes recorded by the police by NUTS 3 regions (crim_gen_reg)	EU SILC
Goal 16	Trust in the legal system	EU-SILC ad-hoc Quality of Life module
Goal 16	European Quality of Government Index (EQI)	Transparency International
Goal 16	Trust in the EU	DG COMM
Goal 16	Trust in the police	EU-SILC ad-hoc Quality of Life module
Goal 17	Online interaction with public authorities	Eurostat
Goal 17	Innovative SMEs collaborating with others	Regional Innovation Scoreboard
Goal 17	Broadband at home	Eurostat
Goal 17	Public-private co-publications	Regional Innovation Scoreboard
Goal 17	International scientific co-publications	Regional Innovation Scoreboard

4.1.2 Selection Criteria

To select the indicators for the SDGs localising tool, a three step approach has been followed.

Firstly, to achieve alignment with the Eurostat approach in terms of the conceptual choices made by goal an examination of the availability of indicators included in Eurostat's SDGs & me tool has been conducted. The considerations made to select the indicators considered:

(1) Availability at national level: if an indicator covers large EU countries at national level only alternatives were considered [ongoing assessment]]

(2) Availablity at regional level: If an indicator is available for less than 70% of the regions alternatives were considered [ongoing assessment]]

Secondly, the indicator framework has been checked for its relevance at the regional level in two ways:

(1) By cross checking the approach and selection of indicators of the OECD report "A Territorial Approach to the Sustainable Development Goals": The two approaches from

the perspective of indicators put forward appear conceptually aligned. Some interesting indicators proposed in the latter report have been considered as additional indicators or for replacing proposed indicators and are indicated in the subsequent chapters in 4.2.

(2) By piloting the indicator framework with three regions (see section 5.1): This work will be conducted upon approval of the inception report.

Thirdly, in the case of remaining gaps compared to Eurostat's SDGs & me and OECD indicators RACER criteria (Relevant, Acceptable, Credible, Easy and Robust[2]) were considered for the selection of alternative indicators:

(3) Relevance: The indicator should have a strong correlation with the SDGs. Indicators /good proxies of the Eurostat approach at regional level fulfil the criterion.

(4) Acceptable: The indicator must be easily understood and should be accepted by all stakeholders. Indicators /good proxies of the Eurostat approach at regional level fulfil the criterion.

(5) Credible: The indicators must be accessible to non-experts, unambiguous and easy to interpret. Indicators /good proxies of the Eurostat approach at regional level fulfil the criterion.

(6) Easyness: It should be possible to collect the data with available resources for the updates of the SDGs localising tool.

(7) Robustness: The indicators should be sensitive enough to monitor changes.

4.1.3 Sources consulted

Table 2 lists the sources for indicators consulted, though not necessarily all were used. In reviewing and proposing other indicators from Eurostat, we have cross-checked with the latest version of the Eurostat SDG Indicator set which, also has a list of "on-hold" indicators in addition to the six indicators retained for each SDG.

Table 2 Sources consulted

Source	URL
EU SDG Indicator set 2019	https://ec.europa.eu/eurostat/documents/276524/9479054/2019-01-08__EU_SDG_indicator_set_2019_review_final_report.pdf

[2] Relevant: The indicator should have a strong correlation with the objective that the programme/policy aims to achieve.
Acceptable: The indicator must be easily understood and should be accepted by all stakeholders.
Credible: The indicators must be accessible to non-experts, unambiguous and easy to interpret.
Easy: It should be possible to collect the data with available resources, based on the principle of 'proportionate analysis' (appropriate scope and depth).
Robust: The indicators should be sensitive enough to monitor changes; therefore it is important to select them according to the time lag between the action and the expected change that points to current progress towards long-term or future improvements. It is therefore important not to rely on i) old data; ii) indicators that, having been developed to compare countries or situations, are not suitable for monitoring changes; iii) variables influenced by long-term impacts; iv) variables that are deeply affected by uncontrolled short-term changes hiding the expected long-term changes.
Source: DEVCO (2016).

Source	URL
Regional database of EUROSTAT	https://ec.europa.eu/eurostat/web/regions/data/database
Eurostat Regional Yearbook 2019	https://ec.europa.eu/eurostat/web/products-statistical-books/-/KS-HA-19-001
Eurostat Statistical Atlas (latest update)	http://ec.europa.eu/eurostat/statistical-atlas/gis/viewer/?config=config.json&
Regions and cities illustrated today	https://ec.europa.eu/eurostat/cache/RCI/#?vis=nuts2.labourmarket&lang=en
Eurostat Science, Technology and Innovation database	https://ec.europa.eu/eurostat/web/science-technology-innovation/data/database
Eurostat LUCAS database	https://ec.europa.eu/eurostat/web/lucas/data/database
ESPON projects	https://www.espon.eu/applied-research
EEA Natura 2000 data	https://www.eea.europa.eu/data-and-maps/data/natura-10#tab-gis-data https://www.eea.europa.eu/data-and-maps/data/nationally-designated-areas-national-cdda-14
EEA Bathing water data	https://www.eea.europa.eu/data-and-maps/data/bathing-water-directive-status-of-bathing-water-11
DG AGRI Farm Accountancy Data Network	https://ec.europa.eu/agriculture/rica/database/database_en.cfm
European Pillar of Social rights (scoreboard)	https://cor.europa.eu/en/news/Pages/regional-social-scoreboard.aspx
Eurobarometer Special Surveys	https://ec.europa.eu/commfrontoffice/publicopinion/archives/eb_special_419_400_en.htm
European Environment Information and Observation Network	https://www.eionet.europa.eu/
Quality of Government Institute	https://qog.pol.gu.se/data
EXIOBASE Environmental footprints	https://environmentalfootprints.org/
European Bird Census Council	https://www.ebcc.info/european-wild-bird-indicators-2017-update/
World Resource Institute	http://datasets.wri.org/
OECD	A Territorial Approach to the Sustainable Development Goals, Draft Synthesis Report

4.2 Indicators Assessment by goal

The 17 goals are described below in more detail, showing their correspondence to the indicators of Eurostat's SDGs & me tool. During the inception meeting, in consultation with ESPON EGTC and the steering committee the list of indicators may be further revised.

4.2.1 Goal 1 – No poverty

Indicators 1.1 and 1.2 as included in Eurostat's SDGs & me tool are available at regional level. Indicators 1.3-1.5 are alternative indicators proposed representing good proxies of the indicators selected by Eurostat. The ESPON TiPSE project on Territorial Dimension of Poverty and Social Exclusion in Europe is an alternative to the EU SILC database should access to the latter database be limited. Another relevant indicator to be considered in the future comes from the ESPON Big Data and Housing project namely the indicator of affordability defined as a gap between housing prices and households' income using big data.

Table 3 Goal 1 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
1.1	People at risk of poverty or social exclusion	EU SILC	People at risk of poverty or social exclusion	EU SILC
1.2	In work at-risk-of-poverty rate	EU SILC	In work at-risk-of-poverty rate	EU SILC
1.3	Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames of floor by poverty status	EU SILC	Satisfaction with housing: Percentage of people who feel satisfied with the dwelling they live in	EU SILC
1.4	Population unable to keep home adequately warm by poverty status	MPI	Lack of adequate heating: Percentage of people who are in the state of enforced inability to keep home adequately warm	EU SILC
1.5	Overcrowding rate by poverty status	MPI/European Quality of Institutions Index and DG Regio own computations	Overcrowding: Percentage of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation	EU SILC

4.2.2 Goal 2 – Zero hunger

All indicators proposed represent alternative indicators which are considered good proxies of the indicators selected by Eurostat.

Table 4 Goal 2 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
	Obesity rate by body mass index (BMI)	ESS (EHIS & SILC),	na	na
2.1	Government support to agricultural research and development	ESS	Structural funds Thematic Objective 1: Research & Innovation: Farm performance & New Farmers (SF) [1] Horizon 2020 funding	DG REGIO CORDIS
2.2	Area under organic farming	ESS	Organic farming: selected variables by size of farm (UAA) and NUTS 2 regions	EUROSTAT [ef_so_mporg]
2.3	Ammonia emissions from agriculture	EEA	Manure storage facilities by NUTS 3 regions [2]	EUROSTAT
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
2.4			Insufficient food (EU SILC)	EU SILC

Notes

[1] This indicator is limited to European funding from Structural funds and Horizon 2020 and is not readily available and hence more resource intensive.

[2] According to Eurostat's metadata, manure storage facilities have a strong influence on the release of nutrients into the environment. Their relative use is an important indicator on farm management practices. Data on manure storage facilities are gathered through the Farm Structure Surveys (FSS) conducted by Member States accordingly to the specific community legislation.

4.2.3 Goal 3 – Good Health and Wellbeing

Four out of the five indicators included in the SDGs & me tool are available at regional level (3.1-3.4). For the indicator 'Smoking prevalence by sex' no good proxy has been identified. Synergies with the ESPON Quality of Life project will be explored.

Table 5 Goal 3 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
3.1	Life expectancy at birth by sex	ESS	Life expectancy at birth	EUROSTAT [tgs00101]

3.2	Share of people with good or very good perceived health by sex	EU SILC	General health status: Proportion of persons who assess their health to be very good or good to the question on self-perceived health ('How is your health in general?')	EU SILC
	Smoking prevalence by sex	DG SANTE	na	na
3.3	Death rate due to tuberculosis, HIV and hepatitis by sex	ESS	Death rate due to tuberculosis, HIV and hepatitis by sex	EUROSTAT [hlth_cd_acdr2]
3.4	Self-reported unmet need for medical examination and care by sex	EU SILC	Self-reported unmet need for medical examination and care by sex	EU SILC

4.2.4 Goal 4 - Quality Education

All indicators included in the SDGs & me tool are available at regional level.

Table 6 Goal 4 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
4.1	Early leavers from education and training by sex	ESS - LFS	Early leavers from education and training by sex	EUROSTAT [edat_lfse_16]
4.2	Tertiary educational attainment by sex	ESS - LFS	Tertiary educational attainment, age group 25-64 by sex and NUTS 2 regions	EUROSTAT [TGS00109]
4.3	Employment rates of recent graduates	ESS - LFS	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions	EUROSTAT [edat_lfse_33]
4.4	Adult participation in learning by sex	ESS - LFS (educ_uoe_enra14)	Participation rates of selected age groups in education at regional level	EUROSTAT [educ_uoe_enra14]
4.5	Young people neither in employment nor in education and training by sex	ESS - LFS	Young people neither in employment nor in education and training by sex, age, citizenship and NUTS 2 regions (NEET rates)	EUROSTAT [edat_lfse_38]

4.2.5 Goal 5 – Gender Quality

For three out of the six indicators included in the SDGs & me tool there are available indicators/good proxies thereof at regional level (5.1 - 5.3). We also propose to add 'Early leavers from education and training by sex' which is included in the 'on hold' list of Eurostat indicators and is available at the regional level (5.4). An interesting indicator at regional level could be the proportion of women in local governments. Inquiries will need to be made at institute of Gender Equality (European Gender Index) to explore whether such indicator can be constructed.

Table 7 Goal 5 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
na	Gender pay gap in unadjusted form	ESS (SES)	na	na
5.1	Gender employment gap	ESS (LFS)	Difference between female and male employment rates	ESS (LFS), EUROSTAT and DG Regio own computations
na	Inactive population due to caring responsibilities by sex	ESS (LFS)	na	na
	Positions held by women in senior management positions	EIGE	na	na
5.2	Tertiary educational attainment by sex	ESS (LFS)	Students enrolled in tertiary education by education level, program me orientation, sex and	EUROSTAT [educ_uoe_enrt06]

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
			NUTS2 regions (measured as percent of women)	
5.3	Employment rates of recent graduates by sex	ESS (LFS)	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions (measured as percent of women)	EUROSTAT [edat_lfse_33]
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
5.4			Early leavers from education and training by sex (measured as percent of women)	ESS (LFS)

4.2.6 Goal 6 – Clean water and sanitation

One of the two indicators included in the SDGs & me tool can be obtained for the regional level. We propose to map the GIS data from the EEA to NUTS 2 level. In order to better capture the breadth of the goal, we propose to include up to four additional indicators, primarily reflecting access to sanitation.

Table 8 Goal 6 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
6.1	Nitrate in groundwater	EEA		
6.2	Bathing sites with excellent water quality by locality	EEA	Bathing sites with excellent water quality (sdg_14_40)	EEA (1)
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
6.3			Population connected to wastewater collection and treatment systems by river basin district (RBD)	EUROSTAT [env_wwcon_rb]
6.4			Satisfaction with water quality	EU SPI / Gallup
6.5			Lack of toilet in dwelling	EU SILC
6.6			Sewage treatment	EEA

Notes
(1) Is also included under Goal 14 Life below water

4.2.7 Goal 7 – Affordable and Clean Energy

None of the four indicators included in the SDGs & me tool have data available at the regional level. For some aspects of energy, such as electricity generation, this is quite understandable as for grids the relevant unit is the national level. The only data and proxies that are available at sub-national level come from research projects or studies. For indicator 7.1 on final energy consumption in households per capita, we propose to use data from the ESPON LOCATE project, which is available for 2012. This includes energy use in residential buildings, but not personal transport. As a proxy for indicator 7.2, we also propose to use the share of renewable energy in heating and cooling buildings, which is also from the LOCATE project and is available for 2012. An update of these two indicators by ESPON would be valuable. As a proxy for indicator 7.4 on the greenhouse gas emissions intensity of energy consumption, we propose to use the carbon footprint of household consumption from the EXIOBASE input-output analysis. This is modelled data with most recent year being 2013.

Table 9 Goal 7 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
7.1	Final energy consumption in households per capita (sdg_07_20)	ESS	Household energy consumption per capita	ESPON LOCATE project (1)
7.2	Share of renewable energy in gross final energy consumption by sector (sdg_07_40)	ESS	Share of renewable energy in heating and cooling of buildings	ESPON LOCATE project
7.3	Energy import dependency by products (sdg_07_50)	ESS	na	
7.4	Greenhouse gas emissions intensity of energy consumption (source: EEA and Eurostat) (sdg_13_20)	EEA	Carbon footprint of household consumption	EXIOBASE
			Inability to keep home adequately warm (percent of households)	EU-SILC (ilc_mdes01)

Notes
(1) Is also included under Goal 13 Climate action

4.2.8 Goal 8 – Decent work and economic growth

For three out of the four indicators included in the SDGs & me tool there are available indicators/good proxies thereof at regional level (8.1-8.3). In addition to those we propose an additional indicator from EU-SILC the 'In work at-risk-of-poverty rate' which is included in the longer list of EUROSTAT indicators and is available at the regional level (8.4).

Table 10 Goal 8 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
8.1	Real GDP per capita	ESS (National accounts)	Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions	EUROSTAT [TGS00005]
8.2	Employment rate by sex	ESS (LFS)	Employment rates by sex, age, educational attainment level, citizenship and NUTS 2 regions	EUROSTAT [lfst_r_lfe2emprtn]
8.3	Long-term unemployment rate by sex	ESS (LFS)	Long-term unemployment (12 months and more) by NUTS 2 regions	EUROSTAT [lfst_r_lfu2ltu]
	People killed in accidents at work	ESS (ESAW)	na	na
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
8.4			In work at-risk-of-poverty rate	EU SILC (1)

Notes
(1) Is also included under poverty

4.2.9 Goal 9 - Industry, innovation and infrastructure

For all three indicators included in the SDGs & me tool there are available indicators/good proxies thereof at regional level.

Table 11 Goal 9 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
9.1	Gross domestic expenditure on R&D by sector	[sdg_09_1]	Intramural R&D expenditure (GERD)	[rd_e_gerdreg]
9.2	R&D personnel by sector	[sdg_09_30]	Total R&D personnel	[rd_p_persreg]
9.3	Share of busses and trains in total passenger transport	[sdg_09_50]	Equipment rate for public transport vehicles (number of motor coaches, buses and trolleybuses per 1000 inhabitants)	[tran_r_vehst, road_eqs_busveh, demo_r_d2jan]

4.2.10 Goal 10 – Reduced inequalities

For two of the indicators included in the SDGs & me tool, the data is available at the regional level. For income share at the bottom 40% of the population, there is a acceptable proxy in SILC (which is also used for Goal 1).

Table 12 Goal 10 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
10.1	Adjusted gross disposable income of households per capita (sdg_10_20)		Disposable income of private households by NUTS 2 regions per inhabitant	[tgs00026]
10.2	Income distribution (sdg_10_41)	SILC	Disposable income of private households by NUTS2 regions relative to national average	[tgs00026]
10.3	Income share of the bottom 40 % of the population (sdg_10_50)	SILC	People at risk of poverty or social exclusion by NUTS 2 regions	[ilc_peps11] (1)

Notes
(1) Is also included under Goal 1 No poverty

4.2.11 Goal 11 – Sustainable cities and communities

For three of the five indicators included in the SDGs & me tool, the data is available at regional level. For indicator 11.1 on population living in households considering that they suffer from noise, there is a reasonable proxy available in SILC: overcrowding rate by poverty status. We have not been able to locate an available proxy for 11.5, recycling rate of municpal waste with sufficient regional coverage.

Table 13 Goal 11 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
11.1	Population living in households considering that they suffer from noise, by poverty status (sdg_11_20)	Eurostat	Overcrowding rate by poverty status	EU-SILC [ilc_lvho04n] [isoc_r_iacc_h]
11.2	Settlement area per capita (sdg_11_31)	SILC & LUCAS	Settlement area per capita (sdg_11_31)	SILC & LUCAS
11.3	People killed in road accidents (sdg_11_40)	DG MOVE	Victims killed in road accidents by NUTS2 regions	[tran_r_acci]
11.4	Exposure to air pollution by particulate matter (sdg_11_50)	EEA	Air pollution – pm 2.5	EEA
11.5	Recycling rate of municipal waste (sdg_11_60)	Eurostat	na	na

4.2.12 Goal 12 – Responsible consumption and production

None of the three indicators in the SDGs & me tool is available at the regional level. For 12.1, on generation of waste, we propose to use as a proxy municipal waste from Eurostat which is the subject of a pilot project. A disadvantage though is that there are issues concerning the comparability across countries. For indicator 12.3 on final energy consumption, we propose as a proxy the energy consumption of both households and businesses from the ESPON LOCATE project (similar to Goal 7), though this is available only for 2012. To reflect the additional attention under this goal to production, we propose using the combined by both households and businesses, whereas under Goal 7, we propose only the consumption of households. In addition, we suggest an additional indicator from the EEA on uncollected sewage which is available at regional level. Progress towards Goal 12 should result in a decrease in uncollected

sewage, though this is an indirect indicator of responsible consumption and production. The data is currently available for 2010 and so there is a question as to future collection plans (to be checked with EEA).

Table 14 Goal 12 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
12.1	Generation of waste excluding major mineral wastes by hazardousness (sdg_12_50)	Eurostat	Municipal waste by NUTS 2 regions (pilot project data)	[env_rwas_gen]
12.2	Recycling rate of waste excluding major mineral wastes (sdg_12_60)	Eurostat	na	
12.3	Final energy consumption (sdg_07_11)	Eurostat	Final energy consumption by households and business	ESPON LOCATE Project (1)
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
12.4			Uncollected sewage	EEA

Notes
(1) Is partly (household) included under Goal 7 Affordable and clean energy

4.2.13 Goal 13 – Climate action

Regional-level data is not available for any of the indicators in the SDGs & me tool. For the indicator 13.1 on greenhouse gas emissions, we propose to use as proxies up to three of the air pollution indicators collected by Eurostat, as these are generally correlated with fossil fuel combustion. We also propose to use an additional indicator on the carbon footprint of consumption from the EXIOBASE model (included and discussed above under Goal 7 Affordable and clean energy.

Table 15 Goal 13 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
13.1	Greenhouse gas emissions (sdg_13_10)	EEA	Air pollution – PM10 Air pollution – PM2.5 Air pollution – ozone	EEA (1)
13.2	Share of renewable energy in gross final energy consumption by sector (sdg_07_40)	Eurostat	na	
13.3	Average CO2 emissions per km from new passenger cars (sdg_12_30)	EEA DG CLIMA	na	
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
13.4			Carbon footprint of household consumption	EXIOBASE (2)

Notes
(1) Air pollution PM 2.5 is also included under Goal 11 Sustainable cities and communities
(2) Is also included under Goal 7 Affordable and clean energy

4.2.14 Goal 14 – Life below water

Both of the indicators in the SDGs & me tool can be obtained for the regional level. We propose to map the GIS data from the EEA to NUTS 2 level.

Table 16 Goal 14 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
14.1	Surface of marine sites designated under NATURA 2000 (sdg_14_10)	ENV EEA	Surface of marine sites designated under NATURA 2000	EEA

14.2	Bathing sites with excellent water quality (sdg_14_40)	EEA	Bathing sites with excellent water quality (sdg_14_40)	EEA (1)

Notes
(1) Is also included under Goal 6 Clean water and sanitation

4.2.15 Goal 15 – Life on land

Of the two indicators included in the SDGs & me tool, share of forest area is available at the regional level. We propose to supplement this with area of Natura 2000 sites, which can be obtained by mapping GIS data from EEA to NUTS 2 level (as in Goal 14). For the other indicator from the SDGs & me tool, we propose to use a proxy, land covered by artificial surfaces, from the Eurostat LUCAS database.

Table 17 Goal 15 Indicators assessment

#	**EUROSTAT**		**ESPON Localising Tool**	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
15.1	Share of forest area [SDG_15_10]	Eurostat (LUCAS)	Share of forest area [SDG_15_10]	[lan_use_ovw]
15.2	Soil sealing index [SDG_15_41]	EEA	Land covered by artificial surfaces	EUROSTAT (LUCAS) [lan_lcv_art]
			Proposed indicators beyond the Eurostat SDGs & me framework	**Source**
15.3			Protected land (Natura 2000)	EEA

4.2.16 Goal 16 – Peace, justice and strong institutions

None of the four indicators in the SDGs & me tool is available at the regional level. We propose proxies in each case. For indicator 16.1 on crime, we propose a similar SILC indicator on crimes reported by police. For indicator 16.3 on corruption, we propose a proxy from the Quality of Government Institute at the University of Gothenberg in Sweden. For indicator 16.4 on population with confidence in the EU institutions, we propose using an indicator from the Eurobarometer Flash survey. We expect these proxies to provide quite good coverage of the goal.

Table 18 Goal 16 Indicators assessment

#	**EUROSTAT**		**ESPON Localising Tool**	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
16.1	Population reporting occurrence of crime, violence or vandalism in their area by poverty status (sdg_16_20)	SILC	Crimes recorded by the police by NUTS 3 regions (crim_gen_reg)"	EU SILC
16.2	Perceived independence of the justice system (sdg_16_40)	DG COMM	Trust in the legal system	EU SILC
16.3	Corruption Perceptions Index (sdg_16_50)	Transparency International	European Quality of Government Index (EQI)	Quality of Government Institute, U. Gothenberg
16.4	Population with confidence in EU institutions by institution (sdg_16_60)	DG COMM	Trust in the EU	Eurobarometer Flash survey
16.5			Trust in the police	EU SILC

4.2.17 Goal 17 – Partnerships for the goals

The two indicators included in the SDGs & me tool are not applicable at the regional level. Conceptually some of the additional Eurostat indicators for the goal such as imports from developing countries could be applicable, however data is not available. The option initially proposed was to use the two national indicators with a clear explanation for the user that these

are only applicable at the national level. However based on the Steering committee meeting, it was agreed to also consider other alternative indicators that would be in line with the concept of Goal 17, available on regional level and from EU sources, despite the fact that these would not be included in the SDGs and me tool. Apart from the official UN targets, the project team has also considered the recently published OECD work "A Territorial Approach to the Sustainable Development Goals". In this light, using EU sources, the following indicators would be suitable to capture the concept of Goal 17 on regional level.

Table 19 Goal 17 Indicators assessment

#	EUROSTAT		ESPON Localising Tool	
	SDGs & me -national level	**Source**	**Proposed indicators**	**Source**
17.1			Online interaction with public authorities	Eurostat
17.2			Innovative SMEs collaborating with others	ional Innovation reboard
17.3			Broadband at home[3]	Eurostat
17.4			Public-private co-publications	ional Innovation reboard
17.5			International scientific co-publications	ional Innovation reboard

4.3 Targets

In order to ensure and enhance comparability across many different metrics as well as provide an indication of region's performance vis a vis the Goals the indicators included in the tool will be transformed onto a scale of 0-100 where 0 implies worst performance and 100 implies meeting the set target. This score will be provided in addition to the raw values of each indicator in the raw data download.

However, as we match indicators to SDG targets, we find that some targets are better defined than others so it is important to note the challenges that accompany such efforts. For example, target 3.1 states: "By 2030, reduce the global maternal mortality ratio to less than 70 per 100,000 live births". We set the target value of 70 for maternal mortality rate as equivalent to a score of 100, which reflects a region has achieved this target. Likewise, target 3.6 states, "By 2020, halve the number of global deaths and injuries from road traffic accidents." In this case, we calculate the most current population-weighted EU-countries average number of deaths from road traffic accidents and assign half that value as the benchmark for achieving 100.

Other indicators have no set benchmark defined in the SDG targets. For example, target 3.9, which states: "By 2030, substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination." Since no associated

[3] Internet at home indicator will also be explored

numerical value is mentioned in this text, we rely on external guidance and need to consider the distribution of performance across regions.

The proposed approach by indicator will be provided in the interim report.

4.4 Calculations

The Sustainable Development Goals are by definition a list of goals rather than a conceptual model. For this reason the project team suggests to maintain this rationale and not provide an aggregate performance assessment overall. However, based on engagement with selected pilot regions it has become clear that having such a tool will be preferred by the regions in order to support their local implementation of SDGs. The project will address this in two ways. Firstly, based on the final list of indicators included in the tool the team will propose a methodology of regional scoring and ranking per indicator, which will highlight a region's performance vis a vis the rest of the regions. Performance will be classified into quartiles or quintiles providing the region with valuable relative assessment. A composite measure of individual scores will also be provided at the goal level.

The construction of the aggregate metric will follow standard procedures for composite indicators construction. Initially the quality of each indicator will be assessed based on data availability, timeliness (I.e. values should be relatively recent), conceptual fit and variance. Appropriate approaches will be applied to address data gaps. For each indicator the best and worst case scenario will be defined which will help measure region's distance to achieving the target. Care will be taken to align the best and worst case scenarii with UN and EU targets. Each indicator will be normalized on a scale 0-100, where 0 represents worst performance, and 100 the achievement of the target. The goal score will be the simple average of individual indicator scores. Each region will have a score 0-100 for each indicator and goal as well as rank positioning it vis a vis the rest of the regions.

4.5 Data gaps

We identify three main typologies of data gaps: (1) indicators for which regional data is not available, (2) gaps in some countries which do not report any regional data and (3) gaps in time series. We address the gaps as follows:

(1) No indicator available at regional level matching the Eurostat indicator: In our proposed set of indicators we include alternative indicators which are good proxies of the indicators selected by Eurostat to include in the SDGs & Me tool. As such we opt for selecting indicators that fulfil our criteria on geographic coverage rather than regionalising or imputing data.

(2) No regional breakdown available for some countries: In the case of indicators for which some countries do not report the regional breakdown or allow the publication of regional data we will only present the national level indicator. However, if an indicator covers large EU countries at national level only alternative indicators are proposed. The objective is to avoid using national level indicators.

(3) Incomplete time series: As one of the objectives of the tool is to show progress in time we will be relying on time series of the selected indicators. Considering that the availability of data varies by indicator we will be using three years averages to show the progress from period to period. This will help to address any missing values as well as smooth out fluctuations in indicator values which might be misleading.

Each indicator will be assessed on separate basis with regards to missing values and imputation approach will be considered appropriately and recorded in the methodology report.

4.5.1 Coverage: Geographic and time series gaps

The data coverage has been assessed in terms of availability at regional level and time series gaps. In the table below the column 'Only available at NUT0 or NUTS1 level' indicates per indicator the countries for which data is only available at the aforementioned levels. In the proposed indicators we consider all EU28 regions including Norway, Iceland, Switzerland and Liechtenstein.

For the indicators of EU-SILC given the expansion of the surveys in some countries that have conducted surveys representative at the regional level (NUTS 2) we will explore whether the data can be used for this project. For all other sources with this limitation data will be presented at country level. The column 'period available' indicates the entire period for which data could be available. Several gaps are observed per region which will be mapped out and addressed by the use of light imputations when appropriate (see section 4.5.2).

Table 20 Data coverage

Goal	Indicator	Source	Period	Only available at NUTS 0 or NUTS 1
Goal 1	People at risk of poverty or social exclusion	SILC	2007-2016	NUTS0 for: BE, FR, PT, UK, IS. LI - missing
Goal 1	In work at-risk-of-poverty rate	SILC	Expansion of coverage at regional level with EU SILC expected	
Goal 1	Satisfaction with housing: Percentage of people who feel satisfied with the dwelling they live in EU SILC	SILC	2003-2018	NUTS0 for: BE, IE, FR, PT, UK, IS. LI - missing
Goal 1	Lack of adequate heating: Percentage of people who are in the state of enforced inability to keep home adequately warm (EU SILC)	MPI	2003-2018	NUTS0 for: BE, FR, PT, UK, IS. LI - missing
Goal 1	Overcrowding: Percentage of people living in an overcrowded dwelling, as defined by the number of rooms available to the household, the household's size, as well as its members' ages and family situation (EU SILC)	MPI/European Quality of Institutions Index and DG Regio own computations	2003-2018	NUTS0 for: BE, DE, FR, PT, UK, IS. LI - missing
Goal 2	Insufficient food	EU SILC	data expected	
Goal 2	Structural funds Thematic Objective 1: Research & Innovation : Farm performance & New Farmers (SF)	ESS (GBAORD)	data expected	

Goal	Indicator	Source	Period	Only available at NUTS 0 or NUTS 1
Goal 2	Organic farming: selected variables by size of farm (UAA) and NUTS 2 regions [ef_so_mporg]	ESS,	2000,2003,2005,2007	FR using NUTS 2013. IS and LI -missing.
Goal 2	Manure storage facilities by NUTS 3 regions	EEA	2000, 2003, 2010	LI - missing.
Goal 3	Life expectancy at birth by sex	ESS	1990-2017	
Goal 3	General health status: Proportion of persons who assess their health to be very good or good to the question on self-perceived health ('How is your health in general?')	EU SILC	data expected	
Goal 3	Death rate due to tuberculosis, HIV and hepatitis by sex (sdg_03_41)	EUROSTAT	2011-2016	LI -missing.
Goal 3	Self-reported unmet need for medical examination and care by sex (sdg_03_60)	SILC		
Goal 4	Early leavers from education and training by sex	EUROSTAT	2000-2018	LI - missing.
Goal 4	Tertiary educational attainment, age group 25-64 by sex and NUTS 2 regions	EUROSTAT	2007-2018	LI, CH-missing.
Goal 4	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions [edat_lfse_33]	EUROSTAT	2000-2018	LI - missing.
Goal 4	Participation rates of selected age groups in education at regional level (educ_uoe_enra14)	EUROSTAT	2013-2017	
Goal 4	Young people neither in employment nor in education and training by sex (sdg_08_20)	EUROSTAT	2000-2018	LI - missing.
Goal 5	Difference between female and male employment rates	ESS (LFS), EUROSTAT and DG Regio own computations		
Goal 5	Students enrolled in tertiary education by education level, programme orientation, sex and NUTS2 regions (educ_uoe_enrt06)	EUROSTAT	2013-2017	
Goal 5	Employment rates of young people not in education and training by sex, educational attainment level, years since completion of highest level of education and NUTS 2 regions (edat_lfse_33)	EUROSTAT	2000-2018	LI-missing
Goal 5	Early leavers from education and training by sex (sdg_04_10)	ESS (LFS)	2000-2018	LI-missing
Goal 6	Bathing sites with excellent water quality by locality	EEA	2011-2018	> 75% EU MS and EU aggregate

Goal	Indicator	Source	Period	Only available at NUTS 0 or NUTS 1
				Coastal water: Data are presented for all EU Member States (except landlocked countries); plus Albania. Inland water: Data are presented for all EU Member States except Cyprus and Malta; plus Switzerland.
Goal 6	Population connected to wastewater collection and treatment systems by river basin district (RBD) (env_wwcon_rb)	EUROSTAT	2000-2013	
Goal 6	Satisfaction with water quality	Gallup	multiple latest years	NUTS1 for: BE, DE, EL, NL, UK
Goal 6	Lack of toilet in dwelling	EU-SILC	Average 2011-2013	NUTS0 for: AT, DE, FR, HR, PT, UK NUTS1 for: BE, EL, HU, NL, PL. SE - missing
Goal 6	Sewage treatment	European Environment Agency	2010	HR - missing
Goal 7	Household energy consumption per capita	ESPON LOCATE project (1)	2012	
Goal 7	Carbon footprint of household consumption	EXIOBASE	2013	
Goal 7	Inability to keep home adequately warm (percent of households) (ilc_mdes01	EU-SILC	2009-2018	NUTS0 FOR: AT, DE, FR, HR, PT, UK NUTS1 FOR: BE, EL, HU, NL, PL
Goal 8	Regional gross domestic product (PPS per inhabitant) by NUTS 2 regions (TGS00005)	EUROSTAT	2006-2017	TO CONFIRM
Goal 8	Employment rates by sex, age, educational attainment level, citizenship and NUTS 2 regions	EUROSTAT	1999-2018	LI -missing
Goal 8	Long-term unemployment (12 months and more) by NUTS 2 regions	EUROSTAT	1999-2018	LI -missing
Goal 8	In work at-risk-of-poverty rate (sdg_01_41)	EU SILK		
Goal 9	Intramural R&D expenditure (GERD) (rd_e_gerdreg)	EUROSTAT	1980-2016	LI -missing
Goal 9	Total R&D personnel (rd_p_persreg)		1980-2016	LI -missing
Goal 9	Equipment rate for public transport vehicles (number of motor coaches, buses and trolleybuses per 1000 inhabitants) (tran_r_vehst, road_eqs_busveh, demo_r_d2jan)			
Goal 10	Disposable income of private households by NUTS 2 regions (tgs00026)		2008-2017	CH, LI, IS-missing
Goal 10	Disposable income of private households by NUTS2 regions relative to national average (based on tgs00026)	EUROSTAT	1995-2017	CH, LI, IS-missing
Goal 10	People at risk of poverty or social exclusion by NUTS 2 regions (ilc_peps11)	SILC	Expansion of coverage at regional level with EU SILC expected	

Goal	Indicator	Source	Period	Only available at NUTS 0 or NUTS 1
Goal 11	Overcrowding rate by poverty status	EU-SILC	data expected	
Goal 11	Settlement area per capita	SILC & LUCAS	data expected	
Goal 11	Victims killed in road accidents by NUTS2 regions [tran_r_acci]	DG MOVE	1990-2017	NUTS0 for: IE, LT. IS, LI - missing
Goal 11	air pollution - pm2.5	EEA	data expected	
Goal 12	Municipal waste by NUTS 2 regions - pilot project data (env_rwas_gen)	Eurostat	2000-2013	FR and DE have reported data that deviate considerably from the coverage of the municipal waste definition and are in principle not comparable to other countries.NUTS0 for: CH. LI and IS - missing.
Goal 12	Final energy consumption by households and business	ESPON LOCATE Project (1)	data expected	
Goal 12	Uncollected sewage	European Environment Agency	2010	IS, NO, CH, LI - missing.
Goal 13	Air pollution-pm10 Air pollution - pm2.5 Air pollution - ozone	EEA, DG REGIO	2017	PM10 air pollution is generated by fossil fuel combustion and could be seen as a proxy World resource institute to be explored as additional indicators ESPON Modelled footprint data
Goal 13	Carbon footprint of household consumption	EXIOBASE (2)	2013, data expected	
Goal 14	Surface of marine sites designated under NATURA 2000	EEA	data expected	
Goal 14	Bathing sites with excellent water quality	EEA	2011-2018	> 75% EU MS and EU aggregate Coastal water: Data are presented for all EU Member States (except landlocked countries); plus Albania. Inland water: Data are presented for all EU Member States except Cyprus and Malta; plus Switzerland.
Goal 15	Share of forest area	Eurostat (LUCAS)	2009,2012,2015	NO, IS, CH, LI - missing
Goal 15	Land covered by artificial surfaces by NUTS 2 regions	EEA	2009,2012,2015	NO, IS, CH, LI - missing
Goal 15	Protected land (nNatura 2000)	EEA	data expected	
Goal 16	Crimes recorded by the police by NUTS 3 regions (crim_gen_reg)	EU SILC	2008-2010	
Goal 16	Trust in the legal system	EU-SILC ad-hoc Quality of Life module	2013	NUTS0 for: AT, BE, DE, FR, HR, PT, UK. NUTS1 for: EL, HU, NL, PL
Goal 16	European Quality of Government Index (EQI)	Transparency International	2010,2013,2017	NUTS1 for: BE, DE, EL, SE, UK. NO, IS, CH, LI -missing.
Goal 16	Trust in the EU	DG COMM	2015	NUTS 1 for: BE,BG, EL, IT, UK.
Goal 16	Trust in the Police	EU-SILC ad-hoc Quality of Life module	2013	NUTS0 for: AT, BE, DE, FR, HR, PT, UK. NUTS1 for: EL, HU, NL, PL
Goal 17	Online interaction with public authorities	Eurostat	2011-2018	
Goal 17	Innovative SMEs collaborating with others	ional Innovation reboard	2008, 2010, 2012, 2014, 2016	
Goal 17	Broadband at home	Eurostat	2008-2018	

Goal	Indicator	Source	Period	Only available at NUTS 0 or NUTS 1
Goal 17	Public-private co-publications	ional Innovation reboard	2009, 2011, 2013, 2015, 2017	
Goal 17	International scientific co-publications	ional Innovation reboard	2008, 2010, 2012, 2014, 2016	

Specifically for Western Balkans and Candidate countries we checked for the availability of data at the country level. An overview of the available data by country is provided in Annex 2. The indicator framework followed is the one of Eurostat as indicators are included at country level.

4.5.2 Imputation

Imputations may be used to address the time series gaps. There are two major imputation approaches: single and multiple imputation. The main difference between the two approaches is that the single imputation method fills each missing value with a simulated value while multiple imputation fills each missing value with a set of values. The statistical complexity and computation load of the multiple imputation is significantly higher compared to single imputation. To decide on the most suitable method, rules of thumb like for example the specificities of the dataset (continuous vs. ordinal) and the number of missing data compared to the dimension of the dataset can be used. There is however no definite answer on the most suitable approach (OECD and JRC, 2008). Imputation applications including for example the EU KLEMS database and Innovation Union Scoreboard use single imputation methods. The use of this approach is frequent because it is considered both simple and efficient.

We would suggest to follow a single imputation method namely:

(1) Carry forward/backward: backward and forward imputing is among the single imputation methods employed in the aforementioned EU initiatives, which is done by carrying values along the time series. In the case of consecutive missing values the carry forward method uses the next preceding non-missing value and the carry backward the next succeeding non-missing value.

(2) Interpolation: replacing missing values with the average of the two values adjacent to the missing data which is another very simple imputation method used.

Additionally it should be noted that the quality of data ascertained through interpolation depends largely on the period between two report years. In case of a one-year gap between two reported years, an interpolation of high quality can be assumed. The further apart the two observed years are, the less reliable the gathered data becomes. The limit of tolerance between two observed years is to be set at four years.

A more detailed imputation strategy will be designed after the collection of data has been completed. Insights from the ESPON Database project technical reports: Time Series Analysis and Time Series Data will be considered.

4.5.3 Regionalisation

No regionalisation of data will be performed given the nature of the SDG indicators. In the absence of sufficient coverage at the NUTS 2 level we will suggest alternative indicators. If no second best alternative is available we will only present the data for the available regions.

4.6 Territorial typologies

To identify the most suitable groupings of regions for benchmarking purposes we have: 1) performed interviews with three regions (Catalonia in Spain, Centro in Portugal, Eastern & Midland in Ireland); 2) participated in the EU-SPI peer learning event focusing on the comparability issue in indexes and 3) used results of interviews in a parallel project on online dashboards with representatives of four provinces in the Netherlands.

On the basis of the aforementioned inputs we propose to include in the tool the following territorial typologies that will allow the user to conduct a European wide SDGs benchmarking exercise:

1. Population density;
2. Urban-rural;
3. Metropolitan regions;
4. Income;
5. Regions in the same country;
6. Similar results.

In the tool the user will be able to make combinations of the above territorial typologies (e.g. showcase regions withing the same grouping in terms of both population density and income).

The sources and method for each of the groupings suggested are briefly described in

Table 21.

Table 21 Territorial typologies sources and method

Typology	Source	Method
1.Population density	Eurostat [TGS00024]	Metric: Persons per square kilometer Bands: ≥ 3.4 to 56.6 ≥56.6 to 85.6 ≥85.6 to 126.15 ≥126.15 to 212 ≥212 to 409.95 ≥409.95 Level: Nuts2
2.Urban-Rural	Eurostat [urt_d3area] / ESPON CU Typology Compilation https://ec.europa.eu/eurostat/cache/metadata/en/reg_typ_esms.htm	predominantly urban region intermediate region intermediate region predominantly rural region, remote Eurostat will provide this typology at NUTS2 level so that it can be analysed.
3.Metropolitan regions	ESPON CU Typology Compilation	capital city region metro region (second tier and smaller metro regions)
4. Income	EUROSTAT [reg_eco10]	developed regions with GDP per capita over 90% of the EU average

Typology	Source	Method
		regions in transition between 75% and 90%, and less developed with less than 75%
5.Regions in the same country		
6.Regions with similar results	Based on SDGs dataset	Quartiles/Quintiles based approach

It should be noted that the NUTS version 2016 for the data and delineations will be used.

5 Stakeholder involvement

Stakeholders at national and regional level will be involced in the project to co-design and validate the outcomes of the project. Below, we describe the involvement of stakehodlers for the indicator framework and for the SDG localising tool separately.

5.1 Indicator framework

Stakeholders from regional authorities will be involved in the testing of the indicator framework. This will be done by means of three pilots. The objective will be to validate the relevance at regional level and the acceptance and credibility of the proposed indicator framework.

The selection of regions to act as pilots will be made according to three criteria: 1) experience in SDG indicators and 2) geographic coverage and 3) own interest to be part of the study.

1) Experience: We will target regions involved in the Pilot Project "Measuring what matters to EU Citizens: Social Progress in European Regions". The project ensured diversity in terms of economic and social progress across Europe.[4] Candidate regions include: Bratislava (SK), Bucharest -ilfov (RO), Catlunya (ES), Centro (PT), Easter & Midland Regional Assembly (IE), Easter Slovenia (SL), Emilia Romagna (IT), Upper Norrland (city of Umea and region of Vasterbotten) (SE), Western Greece (EL).

2) Geographic coverage: We will aim at having regions from the South, North/East and central Europe.

3) Own interest: As pilot regions will need to use own resources to be part of the study only regions that can respect the project's timeline will be engaged.

5.2 Tool

To design a user centric tool, consultations with final users, i.e. representatives of regional and national governments will be performed. The interview template can be found in Annex 1.

At regional level five interviews have been planned. The selection of regions follow the same criteria as in the case of the indicator framework. During the inception phase three interviews were conducted with regions in Portugal, Ireland and Spain. All interviewees have expressed

[4] More information on the project Project "Measuring what matters to EU Citizens: Social Progress in European Regions" can be found here: https://eu-spi.eu.

interest to assess the tool in the subsequent steps of the tool's development. Two more interviews are foreseen with regions in Slovenia and the Netherlands.

These interviews were complemented by information from four interviews undertaken with policy advisors in regional (provincial) governments in the Netherlands on their views concerning online dashboard tools.

Moreover, insights gained during the peer learning event of the Pilot Project "Measuring what matters to EU Citizens: Social Progress in European Regions" focusing on the comparability issue in indexes have also been taken into account.

The outcome of this consultation is presented in Table 22 in which functionalities are rated as follows:

1=must have;

2=nice to have;

3=not so useful for my reporting, monitoring.

Table 21 consultations with final users on the funcitionalities of the SDGs localising tool

FUNCTIONALITIES	**PT Centro**	**NL**	**EU SPI project**	**IE Eastern & Midland**	**ES Catalonia**
Customisable and interactive maps by indicator	1	3	na	1	3
Display similar regions to showcase and compare your status based on criteria (population, income, geography …)	1	2	1	1	1
Choose the regions you want to be compared to	2	2	1	3	1
Compare your development over time on the SDGs with that of other regions	1	2	na	1	2
Display only regions within your country	3	3	1	2	2
Display distance to your targets	1	3	na	2	1
Insert your own national/regional/local target	na	3	na	1	2
Display a ranking of regions	2	3	1	2	2
'Generic' recommendations by goal	2	3	na	3	2
Downloading and printing of customised maps and charts	1	1	1	1	2
Downloading the data in order to produce own graphs.	1	1	1	1	1

At national level two interviews have been planned**.** The selection criteria include the aforementioned criteria of experience and geographic coverage. In addition ESPON EGTC will indicate which countries from the ESPON Contact Points (ECPs) Network have indicated interest in the SDGs. Possible candiates include Spain, Lithuania (Ministry of Environment), Belgium (Flemish Government) and Czech Republic.

6 SDGs localising tool

6.1 Wireframes

A wireframe for the tool has been prepared to show the functionality, behaviour, and priority of the content. It should be noted that a wireframe does not include any design or graphics (hence the ESPON corporate Identity and Lay-out for e.g. maps is not part of the wireframe, but will be applied to the lay-out of the tool and be visible in delivery D2). The wireframe can be found here.

Figure 1 Entry page

Table 22 SDG localising tool user path

The users' path for a **region** is described below
Entry page
1. The user selects the SDG
Map
2. The user gets the map with the SDG aggregate performance assessment for all regions (score based quartile/quintile)
3. The user selects indicator and gets the overview on a map with that indicator only

4. The user selects a benchmark grouping of similar regions and gets the map with the user's region and the regions within the benchmark group selected.

Note: the user can choose to select a different SDG from the one selected at the entry page.

Graphs

5. Left corner: The user obtains a spider graph with the similar regions selected (per goal all indicators are provided) and the targets.
6. Right corner: The user obtains a graph to compare the region's growth with the growth of similar regions selected and the median growth of the group (per goal all indicators are provided)

The users' path for a **country** is described below

Entry page

1. The user selects the SDG

Map

2. The user gets the map with the SDG aggregate performance assessment for all regions (score based quartile/quintile).
3. The user selects indicator and gets the overview on a map with that indicator only
4. The user selects a benchmark grouping, that of regions in the same country and gets the map with the user's regions in the country in focus.

Notes:

the user can choose to select a different SDG from the one selected at the entry page.

Graphs

5. Left corner: The user obtains a spider graph with the regions in the same country (per goal all indicators are provided) and the targets.
6. Right corner: The user obtains a graph to compare the regions' growth within the country selected and the median growth of the country (per goal all indicators are provided)

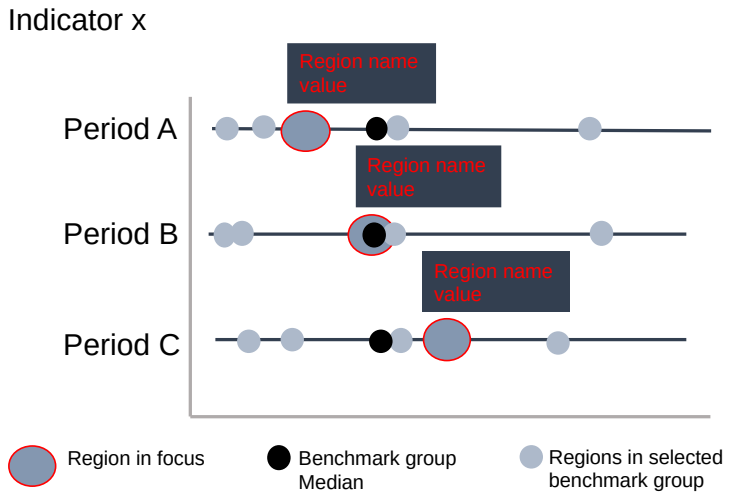
Three main data visualisation means will be used:

1) Maps: Maps are optimal for the visualisation of performance by SDG indicator.
2) Radar charts: Radar charts are optimal for the simultaneous visualisation of all indicators per goal. In one radar graph benchmark regions and targets will be visualised.
3) Box plots: Box plots are optimal to visualise quartiles per indicator. They can also be used to visualise the change per period (by selecting a region the user observes the growth for the region along the periods in consideration). Hovering over the data points

a pop up window with the name of the region, normalised value and possibly the quartile could be provided. An example is shown in Figure 2.

Upon compilation of the data different options could be considered such as column charts or colour coded tables showing the growing or declining trend by indicator.

Figure 2 Examples of visualising growth using box plots, tables, column charts



Indicator	Period A	Period B	Period C	Growth

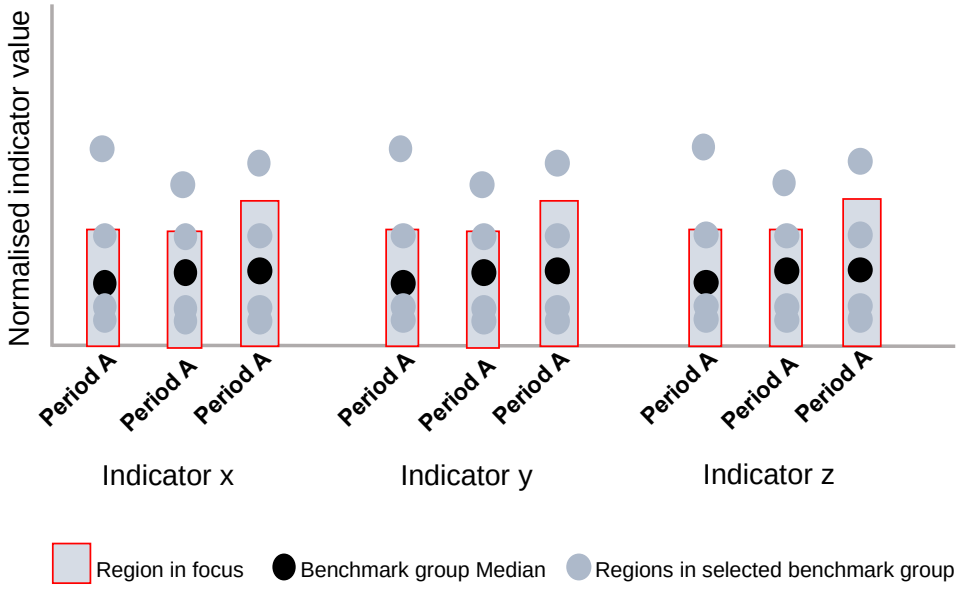
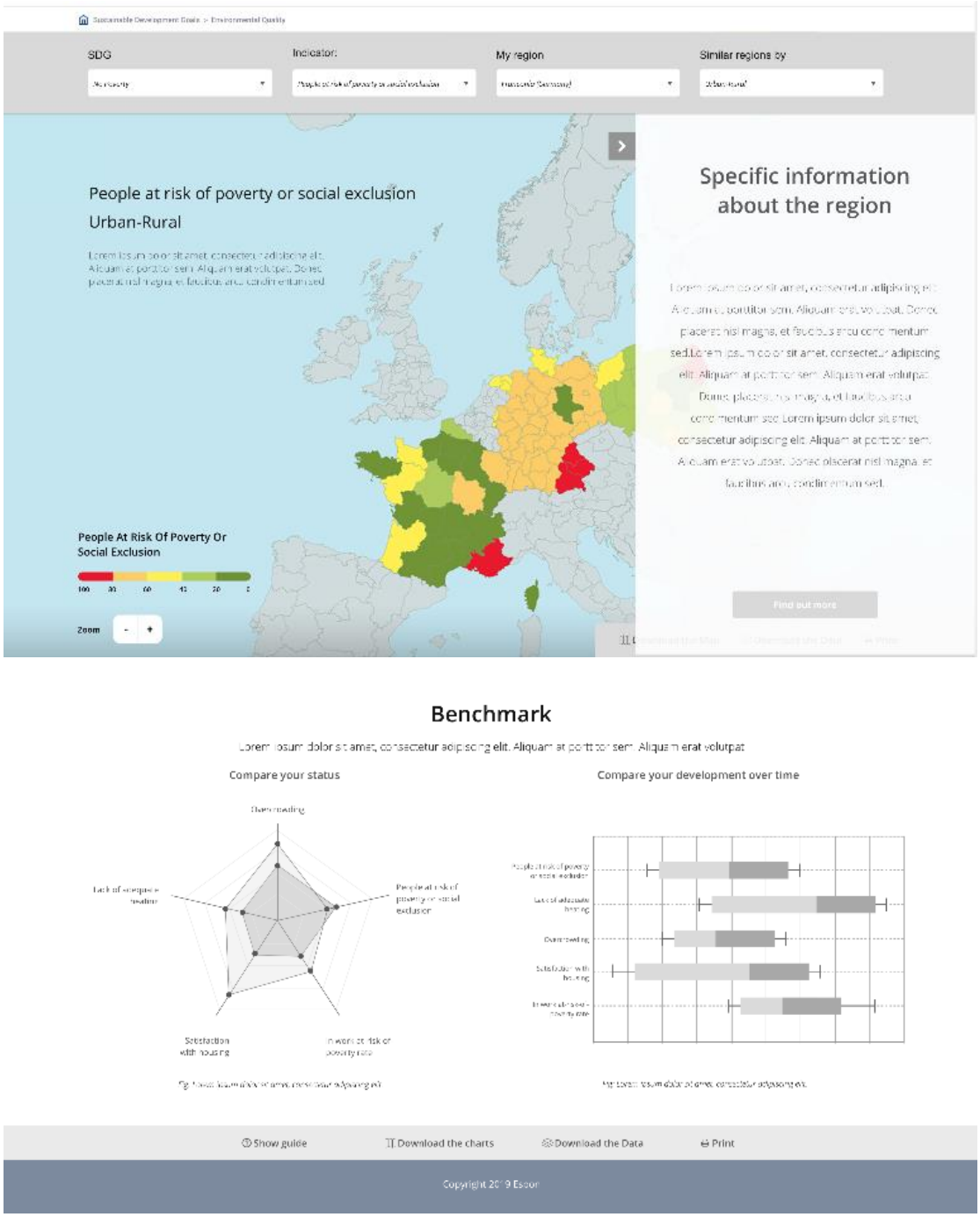


Figure 3 Tool



6.2 Functionalities

The functionalities proposed are listed in Table 23.

Table 23 Functionalities proposed

FUNCTIONALITIES	
Customisable and interactive maps by indicator	Customizable maps for SDGs, regions, indicators zooming in and out Browsing the regions and also reading the content on the popup windows around the map
Display similar regions to showcase and compare your status based on criteria (population, income, geography …)	Yes according to the territorial typologies: Population density Urban-Rural Regions in industrial transition Income Metropolitan regions Regions in the same country Regions with similar results
Choose the regions you want to be compared to	
Compare your development over time on the SDGs with that of other regions	Yes
Display only regions within your country	Yes
Display distance to your targets	Yes
Insert your own national/regional/local target	No
Display a ranking of regions	Yes
'Generic' recommendations by goal	No
Downloading and printing of customised maps and charts	Yes
Downloading the data in order to produce own graphs.	Yes – Full data set will be avaliable for download in Excel format and there will be for each SDG a separate excel sheet.

6.3 Administrator module

There are two possibilities to update the data using the admin panel. Option one is to connect automatically with Eurostats API and feed the data automatically. The second option is to use excel import. The scenarios are available below.

Scenario 1: Connection with Eurostats API would allow for automated data import, which is clearly an advantage, however we believe this option is not the preferred one for multiple reasons:

- data specificities: 1) data that cannot be fetched via api (e.g. Gallup; modelled data from projects); 2) EU SILC indicators which still need to established in which way they can be provided in the SDG tool; 3) indicators based on own calculations from Eurostat data (LUCAS database)
- analytical considerations: 1) calculations for the periods using the available time series; 2) calculations of composites; 3) examination of the data for outliers, missing values.
- technical limitations: the Eurostat API goes through regular changes which implies that a change by Eurostat after the end of this contract will break the system.

Scenario 2: The administrators will be able to edit data points initially imported via excel import feature. In addition, the administrator will be able to re-import the entire data set from the excel

file after updating the values in the file. There will be backup feature allowing to backup the data before re-importing them. This option is not automated and requires administrator work, however it does not require the contractor's engagement for the updates of the data. The administrator will have to prepare the excel file and import the data or simply manually, after login via the web browser, update the data points, which change. In summary the administrators will be able to:

- edit data points initially imported via excel import
- re-import the entire data set from the excel file after updating the values in the file
- use a backup feature allowing to backup the data before re-importing them

6.4 System design and technical requirements for hosting the tool

System design and technical requirements are listed in Table 24.

Table 24 System design and technical requirements

System design and technical requirements	
CMS	Drupal 8
PHP	7.2 or 7.3 (recommended)
PHP extensions	• PHP data objects (PDO) * required https://www.drupal.org/node/549702 • XML extension * required https://www.php.net/manual/en/ref.xml.php • GD library * required https://www.php.net/manual/en/book.image.php • OpenSSL * recommended https://php.net/manual/en/book.openssl.php • JSON * required https://www.php.net/manual/en/json.installation.php • cURL * required https://www.php.net/manual/en/book.curl.php • Mbstring * required https://php.net/manual/en/intro.mbstring.php
Web Server	Apache (Apache 2.x hosted on UNIX/Linux, OS X, or Windows)
Database	• MySQL, MariaDB Required MySQL 5.5.3/MariaDB 5.5.20/Percona Server 5.5.8 or higher with InnoDB as the primary storage engine, and requires the PDO database extension.

System design and technical requirements	
Access Server	Access to the server via ssh is preferable, we can provide host company with a static IP address where WAAT developers can log in (sort of a bastion host). Or we can provide you with public ssh keys from our developers to be added to the webserver. Important is to be able to use the CLi to manage and update the site.
Other tools (Other required installed tools)	• GIT and composer, drush. • https://github.com/ • https://getcomposer.org/ • https://docs.drush.org/en/master/install/ > 9.x

6.5 Testing of the tool

The tool will be tested at three different levels:

1) Technically by the team working on the tool;
2) Manually by the team working on the indicator framework conducting random combinations of filters and checking the tool's performance;
3) Manually by the pilot regions who will be asked to informally report back on their experience and observations.

7 Library

The library will be populated with examples of how LRGs could improve their status on one or more SDGs. For ease of interpretation, the library will be structured according to the 5P's: People, Prosperity, Planet, People and Partnership.[5] The library will include examples of regions developing or implementing actions and initiatives on pushing SDGs forward, and include based examples as well as links to further information (possibly in other languages). The following template for the structure of entries in the Library is proposed (and is subject to modification as appropriate, according to information collected).

Template for Library			
Region			
Country			
Initiative			
Dates			
Status			
URLs			
	About	**SDGs**	**Progress**
People	[basic description]	[specific relevant SDGs]	[in qualitative and quantitative terms if possible]
Prosperity	..	..	..
Planet	..	..	..

[5] See: https://sdg.gdrc.org/post/128479353317/the-five-key-elements-5-ps-that-led-to-the

Template for Library			
Peace	..	..	..
Partnership	..	..	..

The library will be linked to the SDG Localising Tool by SDG. Hence when a user selects and SDG the list of interesting initiatives will be provided by scrolling down hence after the map and benchmark graphs.

A preliminary compilation of interesting initiatives and potential sources for identifying further initiatives is listed below.

Possible examples and information sources for library	
European/ International initiatives	Mayors indicators
	European Reference Framework for Sustainable Cities6
	Handbook for cities on the SDGs (incl. data and case studies; under development, carried out by JRC, DG REGIO and UN Habitat)7
	Association of municipalities (UNDP)
	CoR study on 5 regions, CoR/OECD survey on 'the key contribution of regions and cities to sustainable development' (results shared during the meeting)
	https://europa.eu/regions-and-cities/programme/sessions/435_en
	JRC handbook for SDGs indicators (**Alice Siragusa)**
Regional level initiatives	Portugal
	Instituto Camoes: instituto Camoes is the Portuguese public entity responsible for areas like co-operation, language and culture. They have been funding and/or developing many of the portuguese initiatives related to SDG's in Portugal.
	First Summer School dedicated to SDG's
	SDGs dissemination events;
	Information related to SGD 14;
	National event Agenda 2030: an agenda of innovation in public management;
	Global Compact Network Portugal initiatives and members., adherent organizations;
	Nova University listing their academic contributions to support the SDGs;
	Link to some initiatives from big portuguese companies regarding SDG's implementation, promoted by the Business Council for Sustainable Development (BCSD).
	Catalonia
	SDG localising project from Diputació de Barcelona (Province)
	project from Idescat to gather data to generate indicators of SDGs
	SDG tool of Barcelona that the province is developing (the one Marc mentioned) •
Measurement of SDGs	UCLG (https://www.uclg.org/en) (at global level)

[6] See: http://rfsc.eu/

[7] The idea of the Urban 2030 project is to produce a "handbook" with methodological guidance, harmonised definitions and case studies that can be used by cities in the EU and globally to implement their own SDG monitoring systems. The handbook will help to prepare and support Voluntary Local Reviews monitoring contributions towards the achievement of the SDGs.

List of Annexes

Annex 1: Interview guide

The European Observation Network for Territorial Development and Cohesion (ESPON) has commissioned a consortium managed by Technopolis Group, an international public policy consultancy in cooperation with WAAT and the Social Progress Imperative, to develop an SDG localising tool. This tool will make regional data and indicators available and as such aim to support local and regional governments to play their part in contributing to the SDGs. Currently, our consortium is in the design phase of the tool, during which we will determine the needs, functionalities and relevant indicators. During this process, we are committed to a use- driven approach in order to ensure the maximum level of relevance and usefulness for local and regional governments.

As such, we would be interested in conducting an interview with your regional authority. We hope to gain an understanding whether there are agenda's targeted towards the SDGs and which data sources are used. More specifically, we would like to gain your opinion on a number of questions.

SDGs in my region

1. Does your region have specific programmes/agendas towards the SDGs?

2. Does your region use own/national targets?

Data

3. Are you employing any existing data sources to support you in SDG-related activities?

4. If yes, do you regularly monitor or report on SDG indicators?

- To whom do you report (citizens, central government, EU)?
- Are you required to report or is it your own initiative?
- How were indicators for reporting developed or selected?

Platform

5. Which data platforms or portals are you employing?

- What is your experience with this data platform or portal?
- Which indicators do you access and use (please provide link or source as well)?
- Are these indicators and sources sufficient for your needs? If not, what gaps are there?

6. Are you aware of any national or international platforms showcasing SGD progress on the local level?

7. Who is likely to use the localizing tool within your administration?

- Do you expect others outside the administration to use the tool as well (e.g. NGOs, schools, citizens?)

8. What should be the functionalities of an interactive SDG platform?

- Benchmark
  - European level?
  - National level?
  - At the level of indicator?
  - At the level of goal?
  - Predefined similar regions based on criteria of population, income, geographic region?
  - Own selection of regions?
- Visualise
  - Maps?
  - Bar charts?
  - Spider charts?
  - Other visualisations you would recommend?

9. Rate the tool's functionalities below as:

1=must have
2=nice to have
3=not so useful for my reporting, monitoring

FUNCTIONALITIES	RATE
Customisable and interactive maps by indicator	
Display similar regions to showcase and compare your status based on criteria (population, income, geography …)	
Choose the regions you want to be compared to	
Compare your development over time on the SDGs with that of other regions	
Display only regions within your country	
Display distance to your targets	
Insert your own national/regional/local target	
Display a ranking of regions next to the map by indicator	
'Generic' recommendations by goal	
Downloading and printing of customised maps and charts	
Downloading the data in order to produce own graphs.	

Support mechanisms

10. Would you like to highlight any of your initiatives supporting SDGs?

Conclusion

11. Any other comments?

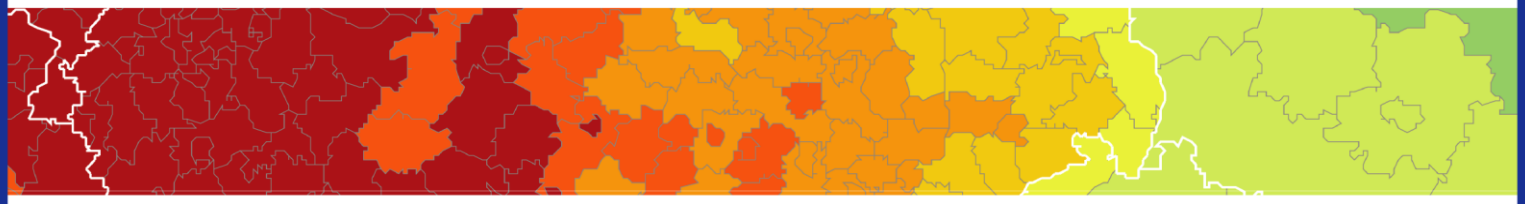
Annex 2
Coverage of SDG indicators for Western Balkans and Candidate countries

SDG #	SDG Goal label	Indicator	Albania	Montenegro	Serbia	Republic of North Macedonia	Bosnia and Herzegovin	Kosovo
Goal 1	No poverty	People at risk of poverty or social exclusion			x			
Goal 1	No poverty	People at risk of income poverty after social transfers (sdg_01_20)			x			
Goal 1	No poverty	Severely materially deprived people (sdg_01_30)			x			
Goal 1	No poverty	People living in households with very low work intensity (sdg_01_40)			x	x		
Goal 1	No poverty	In work at-risk-of-poverty rate (sdg_01_41)			x	x		
Goal 1	No poverty	Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames of floor by poverty status (sdg_01_60)			x	x		
Goal 1	No poverty	Self-reported unmet need for medical examination and care by sex (sdg_03_60)			x	x		
Goal 1	No poverty	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household by poverty status (sdg_06_10)			x	x		
Goal 1	No poverty	Population unable to keep home adequately warm by poverty status (sdg_07_60)			x	x		
Goal 1	No poverty	Overcrowding rate by poverty status (sdg_11_10)			x	x		
Goal 2	Zero hunger	Agricultural factor income per annual work unit (AWU) (source: Eurostat, DG AGRI) (sdg_02_20)				x		
Goal 2	Zero hunger	Government support to agricultural research and development (sdg_02_30)			x		x	
Goal 2	Zero hunger	Area under organic farming (sdg_02_40)			x	x		
Goal 2	Zero hunger	Nitrate in groundwater (source: EEA) (sdg_06_40)			x			
Goal 3	Good health and well-being	Life expectancy at birth by sex (sdg_03_10)	x	x	x	x		x
Goal 3	Good health and well-being	Share of people with good or very good perceived health by sex (sdg_03_20)			x	x		
Goal 3	Good health and well-being	Death rate due to chronic diseases by sex (sdg_03_40)	x		x	x		
Goal 3	Good health and well-being	Death rate due to tuberculosis, HIV and hepatitis by sex (sdg_03_41)	x		x	x		
Goal 3	Good health and well-being	Self-reported unmet need for medical examination and care by sex (sdg_03_60)			x	x		
Goal 3	Good health and well-being	Obesity rate by body mass index (BMI) (sdg_02_10)			x	x		
Goal 3	Good health and well-being	Population living in households considering that they suffer from noise, by poverty status (sdg_11_20)			x	x		
Goal 4	Quality Education	Early leavers from education and training by sex (sdg_04_10)		x	x	x		
Goal 4	Quality Education	Tertiary educational attainment by sex (sdg_04_20)		x	x	x		
Goal 4	Quality Education	Participation in early childhood education by sex (sdg_04_30)		x	x	x		
Goal 4	Quality Education	Underachievement in reading, maths or science (source: OECD) (sdg_04_40)	x	x	x	x		
Goal 4	Quality Education	Employment rates of recent graduates by sex (sdg_04_50)		x	x	x		
Goal 4	Quality Education	Adult participation in learning by sex (sdg_04_60)		x	x	x		
Goal 4	Quality Education	Young people neither in employment nor in education and training by sex (sdg_08_20)		x	x	x		
Goal 5	Gender equality	Gender pay gap in unadjusted form (sdg_05_20)		x	x	x		

SDG #	SDG Goal label	Indicator	Albania	Montenegro	Serbia	Republic of North Macedonia	Bosnia and Herzegovin	Kosovo
Goal 5	Gender equality	Gender employment gap (sdg_05_30)		x	x	x		
Goal 5	Gender equality	Inactive population due to caring responsibilities by sex (sdg_05_40)		x	x	x		
Goal 5	Gender equality	Seats held by women in national parliaments and governments (source: EIGE) (sdg_05_50)			x	x		
Goal 5	Gender equality	Positions held by women in senior management positions (source: EIGE) (sdg_05_60)		x	x	x		
Goal 5	Gender equality	Early leavers from education and training by sex (sdg_04_10)		x	x	x		
Goal 5	Gender equality	Tertiary educational attainment by sex (sdg_04_20)		x	x	x		
Goal 5	Gender equality	Employment rates of recent graduates by sex (sdg_04_50)		x	x	x		
Goal 6	Clean water and sanitation	Population having neither a bath, nor a shower, nor indoor flushing toilet in their household by poverty status (sdg_06_10)			x	x		
Goal 6	Clean water and sanitation	Population connected to at least secondary wastewater treatment (sdg_06_20)	x		x		x	x
Goal 6	Clean water and sanitation	Biochemical oxygen demand in rivers (source: EEA) (sdg_06_30)	x			x	x	
Goal 6	Clean water and sanitation	Nitrate in groundwater (source: EEA) (sdg_06_40)			x			
Goal 6	Clean water and sanitation	Phosphate in rivers (source: EEA) (sdg_06_50)	x		x	x	x	
Goal 6	Clean water and sanitation	Water exploitation index by type of water source (sdg_06_60)	x					x
Goal 6	Clean water and sanitation	Bathing sites with excellent water quality by locality (source: EEA) (sdg_14_40)	x					
Goal 7	Affordable and clean energy	Primary energy consumption (sdg_07_10)	x	x	x	x	x	x
Goal 7	Affordable and clean energy	Final energy consumption (sdg_07_11)	x	x	x	x	x	x
Goal 7	Affordable and clean energy	Final energy consumption in households per capita (sdg_07_20)	x	x	x	x	x	x
Goal 7	Affordable and clean energy	Energy productivity (sdg_07_30)	x	x	x	x	x	x
Goal 7	Affordable and clean energy	Share of renewable energy in gross final energy consumption by sector (sdg_07_40)	x	x	x	x		x
Goal 7	Affordable and clean energy	Energy import dependency by products (sdg_07_50)	x	x	x	x	x	x
Goal 7	Affordable and clean energy	Population unable to keep home adequately warm by poverty status (sdg_07_60)			x	x		
Goal 7	Affordable and clean energy	Greenhouse gas emissions intensity of energy consumption (source: EEA and Eurostat) (sdg_13_20)						
Goal 8	Decent work and economic growth	Real GDP per capita (sdg_08_10)	x	x	x	x		
Goal 8	Decent work and economic growth	Investment share of GDP by institutional sectors (sdg_08_11)			x			

SDG #	SDG Goal label	Indicator	Albania	Montenegro	Serbia	Republic of North Macedonia	Bosnia and Herzegovin	Kosovo
Goal 8	Decent work and economic growth	Young people neither in employment nor in education and training by sex (sdg_08_20)				x		
Goal 8	Decent work and economic growth	Employment rate by sex (sdg_08_30)				x		
Goal 8	Decent work and economic growth	Long-term unemployment rate by sex (sdg_08_40)				x		
Goal 8	Decent work and economic growth	In work at-risk-of-poverty rate (sdg_01_41)				x		
Goal 8	Decent work and economic growth	Inactive population due to caring responsibilities by sex (sdg_05_40)				x		
Goal 8	Decent work and economic growth	Resource productivity and domestic material consumption (DMC) (sdg_12_20)						
Goal 9	Industry, innovation and infrastructure	Employment in high- and medium-high technology manufacturing and knowledge-intensive services (sdg_09_20)		x	x	x		
Goal 9	Industry, innovation and infrastructure	R&D personnel by sector (sdg_09_30)		x	x	x		
Goal 9	Industry, innovation and infrastructure	Patent applications to the European Patent Office (source: EPO) (sdg_09_40)						
Goal 9	Industry, innovation and infrastructure	Share of busses and trains in total passenger transport (sdg_09_50)				x		
Goal 11	Sustainable cities and communities	Overcrowding rate by poverty status (sdg_11_10)			x	x		
Goal 11	Sustainable cities and communities	Recycling rate of municipal waste (sdg_11_60)		x	x	x	x	
Goal 11	Sustainable cities and communities	Population living in a dwelling with a leaking roof, damp walls, floors or foundation or rot in window frames of floor by poverty status (sdg_01_60)			x	x		
Goal 11	Sustainable cities and communities	Population connected to at least secondary wastewater treatment (sdg_06_20)	x		x			x
Goal 11	Sustainable cities and communities	Share of busses and trains in total passenger transport (sdg_09_50)				x		
Goal 11	Sustainable cities and communities	Population reporting occurrence of crime, violence or vandalism in their area by poverty status (sdg_16_20)			x	x		
Goal 12	Responsible consumption and production	Generation of waste excluding major mineral wastes by hazardousness (sdg_12_50)		x	x	x	x	x
Goal 12	Responsible consumption and production	Primary energy consumption (sdg_07_10)	x	x	x	x	x	x

SDG #	SDG Goal label	Indicator	Albania	Montenegro	Serbia	Republic of North Macedonia	Bosnia and Herzegovin	Kosovo
Goal 12	Responsible consumption and production	Final energy consumption (sdg_07_11)	x	x	x	x	x	x
Goal 12	Responsible consumption and production	Energy productivity (sdg_07_30)	x	x	x	x	x	x
Goal 12	Responsible consumption and production	Share of renewable energy in gross final energy consumption by sector (sdg_07_40)	x	x		x		x
Goal 13	Climate action	Greenhouse gas emissions (source: EEA) (sdg_13_10)						
Goal 13	Climate action	Greenhouse gas emissions intensity of energy consumption (source: EEA and Eurostat) (sdg_13_20)						
Goal 13	Climate action	Primary energy consumption (sdg_07_10)	x	x	x	x	x	x
Goal 13	Climate action	Final energy consumption (sdg_07_11)	x	x	x	x	x	x
Goal 13	Climate action	Share of renewable energy in gross final energy consumption by sector (sdg_07_40)	x	x	x	x		x
Goal 14	Life below water	Bathing sites with excellent water quality by locality (source: EEA) (sdg_14_40)	x					
Goal 15	Life on land	Biochemical oxygen demand in rivers (source: EEA) [SDG_06_30]	x			x	x	
Goal 15	Life on land	Nitrate in groundwater (source: EEA) [SDG_06_40]			x			
Goal 15	Life on land	Phosphate in rivers (source: EEA) [SDG_06_50]	x		x	x	x	
Goal 16	Peace, justice and strong institutions	Death rate due to homicide by sex (sdg_16_10)	x		x	x		
Goal 16	Peace, justice and strong institutions	Population reporting occurrence of crime, violence or vandalism in their area by poverty status (sdg_16_20)			x	x		
Goal 16	Peace, justice and strong institutions	Corruption Perceptions Index (source: Transparency International) (sdg_16_50)	x	x	x	x		
Goal 16	Peace, justice and strong institutions	Population with confidence in EU institutions by institution (source: DG COMM) (sdg_16_60)	x	x	x	x		
Goal 17	Partnerships for the goals	EU financing to developing countries by financing source (source: OECD) (sdg_17_20)						
Goal 17	Partnerships for the goals	Shares of environmental and labour taxes in total tax revenues (sdg_17_50)			x			



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ESPON 2020 – More information

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