Welcome to the first exercise session!

Our goal is to put into practice the concepts that are introduced in the lecture

Exercise 1

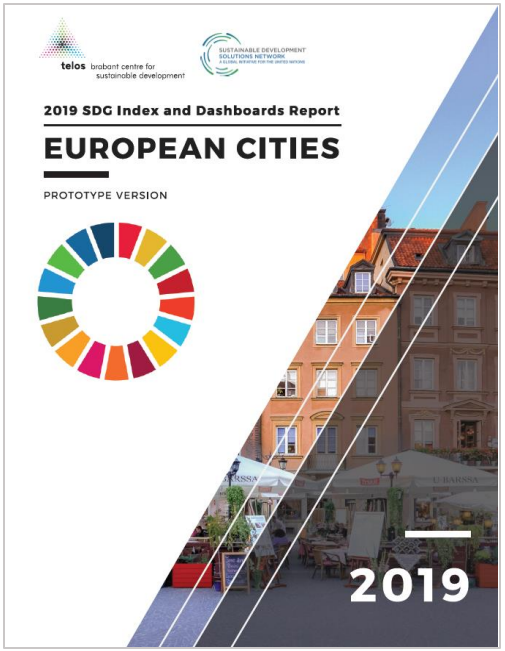
How do we measure urban sustainability?

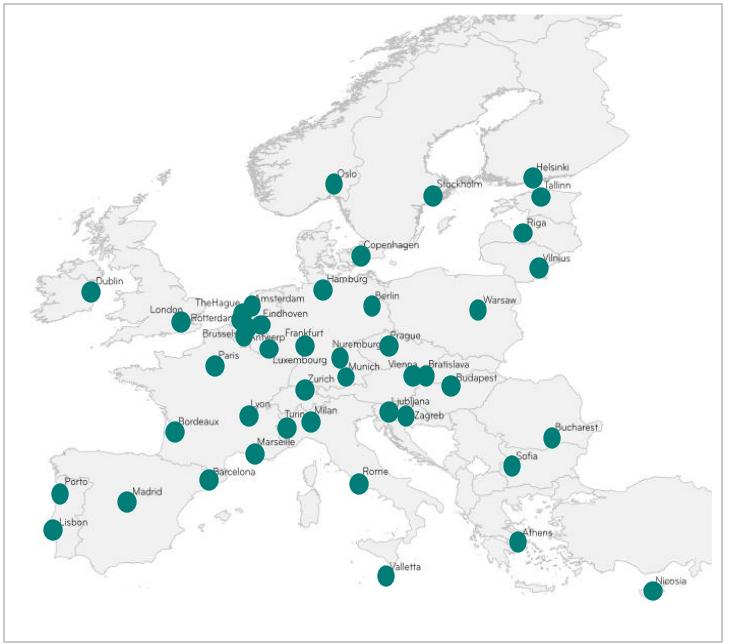
Setting the scene

- Measuring urban sustainability is crucial to understand whether cities are moving towards more sustainable systems

- Urban sustainability is a nebulous concept
- A plethora of tools are available for measuring sustainability
- An equilibrium between simplicity and realism must be found

46 European cities





Exercise based on the 2019 SDG Index (European cities)
https://www.sdgindex.org/reports/sdg-index-and-dashboards-report-for-european-cities/

53 indicators

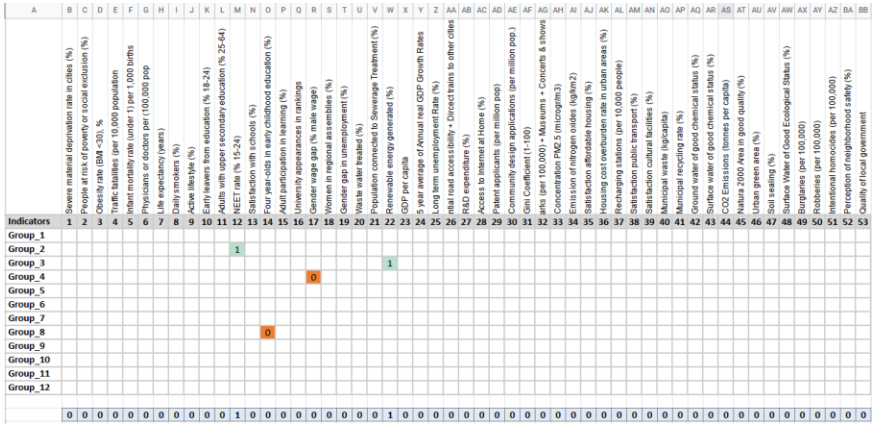
01	Severe material deprivation rate in cities (%)
02	People at risk of poverty or social exclusion (%)
03	Obesity rate (BMI <30), %
04	Traffic fatalities (per 10,000 population
05	Infant mortality rate (under 1) per 1,000 births
06	Physicians or doctors per (100,000 pop
07	Life expectancy (years)
08	Daily smokers (%)
09	Active lifestyle (%)
10	Early leavers from education (% 18-24)
11	Adults with upper secondary education (% 25-64)
12	NEET rate (% 15-24)
13	Satisfaction with schools (%)
14	Four year-olds in early childhood education (%)
15	Adult participation in learning (%)
16	University appearances in rankings
17	Gender wage gap (% male wage)
18	Women in regional assemblies (%)
19	Gender gap in unemployment (%)
20	Waste water treated (%)
21	Population connected to Sewerage Treatment (%)
22	Renewable energy generated (%)
23	GDP per capita
24	5 year average of Annual real GDP Growth Rates
25	Long term unemployment Rate (%)
26	Potential road accessibility + Direct trains to other cities
27	R&D expenditure (%)
28	Access to Internet at Home (%)
29	Patent applicants (per million pop)
30	Community design applications (per million pop.)
31	Gini Coefficient (1-100)
32	Sights & landmarks (per 100,000) + Museums + Concerts & shows
33	Concentration PM2.5 (micrograms/m3)
34	Emission of nitrogen oxides (kg/km2)
35	Satisfaction affordable housing (%)
36	Housing cost overburden rate in urban areas (%)
37	Recharging stations (per 10,000 people)
38	Satisfaction public transport (%)
39	Satisfaction cultural facilities (%)
40	Municipal waste (kg/capita)
41	Municipal recycling rate (%)
42	Ground water of good chemical status (%)
43	Surface water of good chemical status (%)
44	CO2 Emissions (tons per capita)
45	Natura 2000 Area in good quality (%)
46	Urban green area (%)
47	Soil sealing (%)
48	Surface Water of Good Ecological Status (%)
49	Burglaries (per 100,000)
50	Robberies (per 100,000)
51	Intentional homicides (per 100,000)
52	Perception of neighborhood safety (%)
53	Quality of local government

Task

- Divide into groups of 3-4 students, collect an envelope of indicators from the front
- **Select 10 indicators** that you deem **most suitable** to assess urban sustainability in Europe
- **Identify 5 indicators** from the initial catalogue that you deem **not pertinent**
- Specify in a few words the criteria that you considered to select each indicator

When you've chosen your indicators:

- Open this spreadsheet: https://docs.google.com/spreadsheets/d/1DxhXmnuP9F2SDWsxlDriX0n8JnNtr6_me1ylrkqA494/edit?usp=sharing
- See envelope for your group number, and in that row:
- Input your **10 suitable indicators as '1's**
- Input your **5 non-pertinent indicators as '0's**



Indicators	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53
Group_1																																																						
Group_2												1																																										
Group_3																						1																															
Group_4																	0																																					
Group_5																																																					
Group_6																																																					
Group_7																																																					
Group_8														0																																							
Group_9																																																					
Group_10																																																					
Group_11																																																					
Group_12																																																					
	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Break

See you in 5 minutes!

What have we learnt?