#### Appendix 5 Descriptions of the proposed key indicators of sustainable urban development

**Full report: Reinikainen, Tapio; Lyytimäki, Jari; Finel, Nufar; Nieminen, Hanna; Nyberg, Elina (2022-06-13)** "Indicators of sustainable urban development. National monitoring of the UN's New Urban Agenda and of sustainable urban development" available online (in Finnish)

PhenomenonIndicator descriptionClimate changeGreenhouse gas emissions (emissions trading institutions (industry), effort-<br/>sharing sector divided into sub-sectors (incl. district heat emissions trading),<br/>consumption-based emissions, carbon sinks)

#### P = indicator for environmental pressure

Greenhouse gas emissions are calculated with the SYKE ALas 1.1 model<sup>1</sup>. Emissions can be viewed by emissions trading or effort-sharing sector. ALas covers 80 emission sectors and local data is used in their calculations whenever possible. However, for some sectors, the national emissions data has been allocated to municipalities on various grounds. Of the total emissions, figures for CO<sub>2</sub>, methane, nitrous oxide and F-gas emissions are calculated separately and given as CO<sub>2</sub> equivalents. In CO<sub>2</sub> calculations, biofuels are considered to be emission free. The default calculation model used to monitor the targets of municipalities is called Hinku. In Hinku, emissions out of a municipality's control are not included in the calculation. This means that the calculations do not include those emissions covered by emissions trading, i.e., emissions from industry fuel consumption, total industry electricity consumption, industry waste treatment, and transit traffic of vans, buses and lorries. In addition, some emissions are considered compensated if wind power is produced within a municipality. To supplement the Hinku calculations, the ALas model is used to produce emissions data without compensations or other restrictions.

Consumption-based emissions have been studied (Salo et al., 2021, and Nissinen & Savolainen, 2019). According to the studies, Finland's carbon footprint calculated based on consumption-based emissions is about a third larger than the official figures given for emissions generated in Finland's territory. Consumption-based emissions should be monitored in the future.

Using forests as carbon sinks means forests store more carbon (t/C/ha). Regional data is available on forest carbon sinks and changes in them in Luke's Metsäinfo<sup>2</sup> service. Finland reports national data on carbon sinks (in  $CO_2$  equivalents) as part of the land use, land-use change and forestry sector in accordance with the climate agreement. This sector is not covered by emissions trading or the

<sup>&</sup>lt;sup>1</sup> Lounasheimo et al., Suomen kuntien kasvihuonekaasupäästöjen laskenta – Alas-mallin menetelmäkuvaus ja laskentojen tuloksia 2005–2018. Reports of the Finnish Environment Institute 25/2020. ISBN 978-952-11-5180-4 (PDF) ISBN 978-952-11-5179-8 (print) ISSN 1796-1726 (electronic) ISSN 1796-1718 (printed). Only in Finnish, abstract in English. SYKEra\_25\_2020\_ALas\_menetelma.pdf (helsinki.fi)

<sup>&</sup>lt;sup>2</sup> https://metsainfo.luke.fi/ (only in Finnish)

emission targets of the EU Effort Sharing Decision, but changes in carbon sinks have local, regional and national significance.

# **Renewable energy production** (per capita, kWh/person/y and percentage of total energy production)

In this indicator, renewable energy sources are classified as hydropower, the small-scale use of wood, forest industry spent liquors, industry and energy production wood fuels, heat pumps, the biodegradable share of recycled fuels, and other bioenergy. The indicator reflects the production of renewable energy per person for hydropower, forest industry spent liquors, wind power, wood fuels, solar power, biogas, heat pumps and other renewable energy.

#### R = indicator for societal response

What renewable sources of energy have in common is that when they are leveraged sustainably, their reserves do not decrease in the long term. The increase in the use of renewable energy is related to climate agreements, EU targets, and Finland's commitment to becoming carbon neutral by 2035 and, most of all, to the need to slow down climate warming. Renewable sources of energy used in Finland are water, wind and solar power, geothermal heat, biogas, the renewable share of recycled and waste fuel, wood fuels and other plant- and animal-based fuels.

Areal classification: municipality, region, Finland

**Share by transport mode** (walking, cycling, private cars, public transportation, other).

#### P = indicator for environmental pressure

This share by transport mode indicator reflects the foci of the transport politics of cities, the efficiency of the transport system, the functioning of public transportation and its service level, the environmental impact of local traffic, and the environmental awareness of residents. The indicator takes into account commuting, school and service traffic, traffic from running errands, and non-motorised traffic, public transportation, private transportation and other transport modes<sup>3</sup>.

#### Biodiversity The share of green areas in the urban environment of cities

#### *S* = indicator for the state of the environment

Green areas and other public spaces in cities provide opportunities for exercise, recreation, and recovery as well as a stage for the activities of the city's residents and urban culture. Sustainable green construction provides natural values that have a positive effect on health and the attractiveness of the city.<sup>4</sup>

 <sup>&</sup>lt;sup>3</sup> https://julkaisut.hel.fi/fi/julkaisut/kuutoskaupunkien-ekologisen-kestavyyden-indikaattorit/4-liikkumisen-kestavyys (in Finnish only)
<sup>4</sup> HELSINGIN YLEISKAAVA Helsingin viher- ja virkistysalueet ja kaupunkiluonto Helsingin kaupunkisuunnitteluviraston yleissuunnitteluosaston selvityksiä 2013:15. (in Finnish only) https://www.hel.fi/hel2/ksv/julkaisut/yos\_2013-15.pdf

# Area of nature conservation areas (by conservation/habitat type)

Area of nature conservation areas within municipalities by habitat type and conservation type, and their share of the municipality's total area at the end of each year.

# R = indicator for societal response

The EU Biodiversity Strategy has three key commitments related to nature protection: (i) legally protecting a minimum of 30% of the EU's land and sea areas, (ii) strictly protecting at least a third (or 10%) of those protected areas, (iii) strictly protecting all remaining EU primary and old-growth forests regardless of their size.

# Share of old-growth forests of total forest area

Area of forest stands with trees more than 80 years old, and the share of these areas from the total forest area of the municipality at the end of each year (ha and %).

# S = indicator for the state of the environment

According to the EU Biodiversity Strategy, conservation must be targeted at areas with high biodiversity value or potential. The Strategy states that it is 'crucial to define, map, monitor and strictly protect all the EU's remaining primary and old-growth forests'. The definitions for primary and old-growth forests can be found on the Biodiversity Convention website<sup>5</sup>. Usually and in addition to being defined as forests that 'have never been logged', primary forests are defined as forests where disturbances such as slash-and-burn agriculture, forest fires, selection cutting, and other similar events may have occurred, but that have not been subjected to clear cutting or fundamental land-use changes. Old-growth forest stands are stands whose structure has developed into one that resembles an old primary forest. In Southern Finland, there are so few old-growth forests left that even with the existing conserved areas, their total area is not sufficient to meet the 10 per cent conservation target set out in the EU Biodiversity Strategy.

Air quality

# PM 2.5, NOx and SO<sub>2</sub> concentrations at air quality monitoring stations

# *P* = indicator for environmental pressure

Information on the air quality monitoring stations can be found on the Finnish Meteorological Institute website at https://en.ilmatieteenlaitos.fi/air-quality

**Population exposed to air pollution levels higher than WHO's new guideline values** (PM2.5 and NOx in particular). In autumn 2021, WHO updated its air

<sup>&</sup>lt;sup>5</sup> https://www.cbd.int/forest/definitions.shtml

pollution guideline values<sup>6</sup> below which there are no health effects or the health effects are not significant.

#### S = indicator for the state of the environment

The number of people exposed to air pollution levels exceeding the new WHO air pollution guideline values. The figure can be calculated based on map-based data on air pollution levels.

Natural resources and Volume of municipal waste (P) and recycling rate by waste fraction (R)

Volume of municipal waste generated in municipalities in one year (kg/person/y) and the share of municipal waste recycled in municipalities from the total volume of municipal waste generated in one year (%)

#### P = indicator for environmental pressure

#### R = indicator for societal response

# **Recovery rate of excavated soils**

Share of recycled excavated soils from the total volume of excavated soils generated in one year (%)

# R = indicator for societal response

#### **Material footprint**

circular economy

'Material footprint' refers to a method of measuring or calculating all the natural resources that are required to meet our consumption. The amount of natural resources required during the life cycle of a product or service is calculated based on the Material Input per Service Unit (MIPS) concept.

# P = indicator for environmental pressure

# **Economy-wide material flows**

The 'Economy-wide material flows' statistic shows the units of mass (tons) of used, transported or processed natural resources.

#### P = indicator for environmental pressure

This amount of material and its share from the national economy aggregates reflect the material dependency of the national economy and the environmental pressure of economic activities. Material flow accounting aggregates do not directly indicate the intensity and nature of the environmental pressure caused by economic activities.

The EU Regulation on European environmental economic accounts (No 691/2011) obliges Member States to create statistics and report economy-wide material flows annually, for the first time in 2013 and starting with statistics from

<sup>&</sup>lt;sup>6</sup> https://www.ilmatieteenlaitos.fi/saadokset-ja-ohjeet#1PKjkqbAimhKTZYSHYzVHy (only in Finnish)

2008. In the UN System of Environmental-Economic Accounting (SEEA), these statistics are part of the measurement of physical flow accounts for materials.

#### Status of water bodies Water purification percentages

#### R = indicator for societal response

The amount of phosphorus entering wastewater treatment plants has varied and even increased slightly on the annual level; however, the amount of phosphorus entering waterbodies after treatment has decreased by half compared to the levels of 1990. For some time now, wastewater treatment plants have achieved a removal efficiency of 95 per cent in the removal of both organic matter and phosphorus.

In 2017, nitrogen removal efficiency was around 66 per cent. The efficiency has improved with time. For example, in the early 1970s, roughly only a fourth of all nitrogen could be removed in wastewater treatment. The amount of nitrogen entering water bodies after treatment has mostly remained at the same level that it was 40 years ago, even though the amount of nitrogen entering wastewater treatment plants has significantly increased due to the strong population growth in urban areas, for example.

#### Nitrogen, phosphorus and BOD loads entering water bodies

The nitrogen, phosphorus, and Biochemical Oxygen Demand (BOD) load to water bodies by type of load within the areas of municipalities (total load, load from industry, municipal load, diffuse load)

#### *P* = indicator for environmental pressure

# Ecological status of rivers, lakes and coastal areas

The ecological status of rivers, lakes and coastal areas of municipalities' water bodies expressed as their percentage from the total area of each water body type and classified according to the EU Water Framework Directive.

# S = indicator for the state of the environment

Chemicals in the environment	Perfluoroalkyl substances in raw water and wastewater
	Per- and polyfluoroalkyl substances (PFASs) in the raw water of water abstraction facilities and in wastewater (μg/l).
	<i>S</i> = indicator for the state of the environment
	There are thousands of different partly or entirely fluorinated organic compounds (PFASs) with different characteristics. Humans are mainly exposed to PFASs through food, but they can be transported in the environment in several ways. The most significant sources for exposure are fish, fruit, eggs and products made with these. PFASs can be released to the environment directly during their manufacture, during their storage, use and disposal, and through the

wastewater and sludge from municipal wastewater treatment (Mehtonen et al.,

2016). These substances can also be found in consumer goods and they can enter catchment areas via air as fallout. Concentrations vary greatly according to area. The proposed EU Drinking Water Directive would set a threshold value of  $0.5 \mu g/l$  for all PFASs (20 substances) or  $0.1 \mu g/l$  for each substance in drinking water. Monitoring these substances is started based on risk assessments carried out for catchment areas.

# Mercury levels in fish

Mercury levels exceeding the Environmental Quality Standard (EQS) for fish (European perch, Baltic herring: 0.2–0.25 mg/kg) found in the water bodies of municipalities in one year.

#### *S* = indicator for the state of the environment

Mercury levels in fish exceed the EQS (EQS = 0.20–0.25 mg/kg) in many places in Finland, even though the loading from airborne mercury emissions has decreased in recent years (Braaten et al., 2019). The levels vary greatly according to area.

# Land use andNew construction and the expansion of built environment in urban and ruralurbanisationareas

This indicator enables monitoring the development of different types of built urban and rural land areas and making it more effective.<sup>7</sup> It measures the changes in land use and effects on the environment of different types of land use – such as residential use or new construction – business activities and infrastructure. The indicator compares the gross floor area of a built area with the increase in the total area of the built areas falling under the 'urban areas' class in the urban-rural classification of the Finnish Environment Institute.

# P = indicator for environmental pressure

The gross floor area of newly built areas is determined based on the building data of the Population Information System, and the expansion of built environment based on the CORINE land cover inventory.

# Share of population and jobs in pedestrian and public transportation zones in cities and population centres<sup>8</sup>

# S = indicator for the state of the environment

The Finnish Environment Institute has defined urban form zones for Finland's 34 largest urban areas. The zones provide information on the different modes of transport and their availability in a variety of localities. In car-oriented zones,

<sup>&</sup>lt;sup>7</sup> https://helda.helsinki.fi/handle/10138/307888 (only in Finnish, abstract in English)

<sup>&</sup>lt;sup>8</sup> https://www.ymparisto.fi/fi-

FI/Elinymparisto\_ja\_kaavoitus/Yhdyskuntarakenne/Tietoa\_yhdyskuntarakenteesta/Yhdyskuntarakenteen\_i ndikaattorit (only in Finnish)

private cars are usually the only available mode of transport, whereas in public transport zones, railway traffic and buses enable the use of sustainable modes of transport and smooth everyday mobility for those who do not own a car. Pedestrian zones are usually located in metropolitan centres and sub-centres and enable access to everyday services on foot. The zones are formed according to the distance to the centre and the public transportation frequency. In addition, the walking distance to the nearest public transportation stop is taken into account.

Population and job density is calculated for the determined population centre for the monitoring year. The number of jobs reflects the number of employed persons. People with part-time jobs are included in the calculation as one person and one job. The indicator only includes jobs of which the location and coordinates are known.

# New residential construction in pedestrian and public transportation zones

#### R = indicator for societal response

This indicator measures how well new residential construction supports the use of sustainable modes of transport, and the degree of diversity of the transport opportunities available to the residents of new housing. The urban form zones help identify the areas where a private car is not required for daily travel and families with children can get by with one car at most. Examining new construction provides information on how land use planning has affected recent urban form development. Calculations and updates: The indicator is calculated annually for cities and population centres. Information on new residential buildings is obtained from the building data of the Population Information System. The Finnish Environment Institute defines the urban form zones. The indicator primarily reflects the share of new housing in pedestrian and public transportation zones, but exact numbers can also be viewed.

Accessibility of recreational areas (local recreational areas and larger areas)

#### *S* = indicator for the state of the environment

The indicator shows the share of the population that lives 300, 500 or 1,000 metres away from local recreational areas of at least 1.5 hectares, and up to 1,000 or 2,000 metres away from larger recreational areas of at least 20 hectares. The larger the share of population, the better recreational opportunities exist. Distances to green areas are calculated as a straight line, and the data on recreational areas is based on the CORINE inventory. Population data is obtained from the Population Information System. The indicator is available in the living environment data service Liiteri at https://liiteri.ymparisto.fi (only in Finnish).

#### Accessibility of local services

This indicator shows the share of the population from the total population living 250 or 500 metres, or 1 or 2 kilometres away from key local services. The distance to the nearest service is calculated as a straight line.

#### S = indicator for the state of the environment

Good accessibility of local services on foot increases equal opportunities for all population groups to live independently. The indicator reflects the level of service provision and the accessibility of services. Key services include grocery stores, schools and day care centres. It should be noted that human behaviour is not accounted for in any way in the indicator.<sup>9</sup>

# Health and mental

health

# Perceived wellbeing

Share of people who rate their quality of life as good (%)<sup>10</sup>. This indicator reflects the perceived wellbeing of different population groups per area, and indicates the share (%) of people over the age of 20 who rate their quality of life as good.

# S = indicator for the state of health and mental health

The quality-of-life indicator is derived from the eight questions in the WHO8-EUROHIS indicator. Quality of life is a concept referring to an individual's perception of their life in the cultural and value environment in which they live and in relation to their personal goals, expectations, values and other factors important to the individual. Available classifications include gender and the following areal divisions: municipality, region, the wellbeing services county, area for the regional state administrative agency, university hospital special responsibility area, Mainland Finland.

#### Positive mental health

This indicator shows the average positive mental health score on the Short Warwick-Edinburgh Mental Wellbeing Scale (SWEMWBS) for people over the age of 20 (Sotkanet indicator 5562)<sup>11</sup>.

# S = indicator for the state of health and mental health

Positive mental health entails more than just the absence of mental health disorders. It is a resource that can and should be developed and leveraged. According to the current view, mental wellbeing and mental health issues are two different dimensions. In this model, mental health is viewed to be more than just the absence of mental health disorders. Challenges in measuring positive mental health include the complexity of the concept as well as the lack of indicators that would focus on good mental health itself instead of the factors affecting it. Due to this, in population surveys, mental health has traditionally

<sup>&</sup>lt;sup>9</sup> https://helda.helsinki.fi/handle/10138/37038 (only in Finnish, summary in English)

<sup>&</sup>lt;sup>10</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/4270?

<sup>&</sup>lt;sup>11</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/5562?

been examined through different indicators on the prevalence of mental health disorders and their symptoms. The Finnish version of the Warwick-Edinburgh Mental Well-being Scale (WEMWBS) provides the opportunity to add the dimension of positive mental health to the set of indicators available for use in population surveys, intervention studies and practical patient care (Appelqvist-Schmidlechner, 2016).

# Loneliness

The 'Persons who feel themselves lonely'<sup>12</sup> indicator (Sotkanet 4285) measures the perception of loneliness. The indicator gives the percentage of persons in the population who feel lonely fairly often or all the time.

The indicator gives the percentage of persons between the ages of 20 and 64 who feel lonely fairly often or all the time. It is based on the FinSote survey question 'Do you ever feel lonely?' The multiple-choice answer options are '1) never', '2) very rarely', '3) sometimes', '4) fairly often', and '5) all the time'. The shares of those that respond '4) fairly often', and '5) all the time' are included in the indicator. The percentages given are calculated using imputation coefficients. Available classified based on gender and different areal divisions.

# P = indicator for pressure on health and mental health

Loneliness is one indicator of psychosocial wellbeing. Loneliness is a subjective experience generally felt to be unpleasant. The most common reason for feeling lonely is a lack of social relationships. Loneliness should not be confused with simply being alone, which can be experienced as a positive thing.

Loneliness is the product of several external factors such as an individual's own functional capacity or a lack of social relationships. Loneliness may in turn be a contributing factor to a decline in health and a risk factor for social exclusion. Those suffering from chronic loneliness have a lower life expectancy than control groups, and they are more susceptible to infections, cardiovascular diseases and depression. Those suffering from chronic loneliness have a lower life expectancy than control groups, and they are more susceptible to infections, cardiovascular diseases and depression.

<sup>&</sup>lt;sup>12</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/4285?

# Pupils who are bullied at school at least once a week, %<sup>13</sup>

The indicator gives the proportion of pupils in the 8<sup>th</sup> and 9<sup>th</sup> grades of comprehensive school who have been bullied at school at least once a week as a percentage of all those who responded to the question in the age group concerned. The data is based on a school health survey? *The indicator is based on the question: 'How often have you been bullied at school during this semester? Several times a week / Once a week on average / Less frequently / Never.' The indicator includes those who have never been bullied. Thus, the indicator includes the share of these respondents from all the respondents of a given grade. The indicator is available classified based on gender and different areal divisions.* 

# P = indicator for pressure on health and mental health

Bullying means mental or physical violence occurring at a school or other educational institution. Most often, bullying involves name-calling and causing humiliation, but social exclusion is also a common type of bullying. Physical bullying like shoving, kicking or hitting is more common among boys than girls. Monitoring the share of those who are bullied is part of socially sustainable urban development especially, and it is connected with the sense of safety of young people and through that, their wellbeing. 'Bullying damages the structures of good life. It reduces a child's or young person's sense of safety and acceptance, and the level of control they have over their own life.'<sup>14</sup> According to MIELI Mental Health Finland, one in ten children and young people are bullied. Young people must have the opportunity to live their lives without fear of being subjected to mental or physical bullying or violence.

# Obesity

Obesity refers to a body mass index (BMI) of 30 kg/m<sup>2</sup> or more. BMI is the most commonly used method for determining the severity of obesity. The indicator gives the share of obese people over the age of 20 from the total population (Sotkanet 4459)<sup>15</sup>. The data is available classified based on gender and different areal divisions.

# P = indicator for pressure on health and mental health

Obesity increases the risk of cardiovascular diseases, type 2 diabetes and musculoskeletal disorders. It is a significant public health issue in Finland. Diet and physical activity are linked to obesity, for example.

<sup>13</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/1514

<sup>&</sup>lt;sup>14</sup> Lotta Virrankari, Varpu Wiens. Koulukiusaaminen rikkoo mahdollisuuksia eheään elämään – Dialogi (blog post at diak.fi, only in Finnish)

<sup>&</sup>lt;sup>15</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/4459

#### Population morbidity index

The Finnish Institute for Health and Welfare (THL) maintains a morbidity index<sup>16</sup>. The index describes the morbidity in specific municipalities and regions in relation to Finland's total morbidity. It takes into account seven different groups of diseases, and four different weighting aspects are used to evaluate the significance of diseases. The disease groups included in the index are cancer, coronary heart disease, cerebrovascular diseases, diseases of the musculoskeletal system, mental health problems, accidental injuries, and dementia. The prevalence of each disease group is weighted based on the significance of that group in terms of mortality, disability, quality of life, and health care expenditure.

#### S = indicator for the state of health and mental health

Morbidity reflects both regional differences in population health and the functioning of the healthcare system. Regional differences are caused by a variety of factors such as smoking, alcohol use, physical activity, sleep and diet. Unemployment, financial situation and level of education also affect population health, and cultural and genetic factors have an impact as well. In addition, certain diseases are more prevalent in the older population than in younger people, which means that the share of older people in an area also affects the regional differences<sup>17</sup>. Monitoring the prevalence of certain types of diseases is part of socially sustainable urban development. For example, the quality of healthcare, inequalities in educational opportunities between regions, and financial differences are factors affecting the distribution and prevalence of different diseases in different regions. Socially sustainable urban development requires that the promotion of health, wellbeing and functional capacity applies to all members of society equally.

Equality, inclusion and GINI coe opportunities to influence

# GINI coefficient

The GINI coefficient<sup>18</sup> is one the most common indices on income distribution, and it is used in several international indicator sets as well. The higher the GINI coefficient, the more income inequality exists. The highest possible GINI value is one; in this case the income earner with the highest income receives all the income. The lowest possible GINI value is 0, in which case all income earners receive an equal amount of income. In the income distribution statistics, GINI coefficients are presented as percentages (multiplied by one hundred). The GINI coefficient reflects relative income differences. It does not change if the income of all income earners changes by the same percentage. The data is available classified according to municipality.

S = indicator for the state of equality

**Urban segregation** 

<sup>&</sup>lt;sup>16</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/243?

<sup>&</sup>lt;sup>17</sup> https://thl.fi/en/web/thlfi-en/statistics-and-data/statistics-by-topic/morbidity/thl-s-morbidity-index

<sup>&</sup>lt;sup>18</sup> https://www.stat.fi/meta/kas/gini\_kerroin\_en.html

Urban segregation refers to the demographic, socioeconomic, or ethnic segregation of the population to certain residential areas. The indicator<sup>19</sup> is a summary index that includes, per postal code and from the total labour force, the share of households falling in the lowest fifth in income as well as the unemployment percentage and the share of people with a low level of education.

# S = indicator for the state of equality

# Accessibility of built environment

The accessibility of built environment ensures the environment is safe and usable for all population groups, and makes it a good living environment as well as an environment that facilitates everyday life. Accessibility is promoted in terms of buildings, roads, transport, indoor and outdoor areas, schools, healthcare units and workplaces.<sup>20</sup>

# R = indicator for societal response

# Accessibility of digital services

The accessibility of digital services<sup>21</sup> ensures that everyone can use and understand websites and their content. The content must be accessible with aids such as a screen reader.

# R = indicator for societal response

# Voter turnout in different elections

Voter turnout measures the level of political participation. The political participation of young people is strongly dependent on their socioeconomic status. Promoting equal political participation is an integral dimension when considering methods for controlling inequality and preventing social exclusion<sup>22</sup>. Voter turnout = the percentage of people who voted from the entire population with a right to vote. In Finnish municipal elections, the right to vote does not depend on citizenship; instead, it is based on the municipality of residence.

# *S* = indicator for the state of inclusion and opportunities to influence

# **Inclusion indicator**

The THL inclusion indicator<sup>23</sup> measures the perception of inclusion. It comprises ten statements with a scale of one to five, where one signals complete disagreement and five complete agreement.

<sup>&</sup>lt;sup>19</sup> https://tilajakehitys.hel.fi/alueellinen\_eriytyminen (only in Finnish)

<sup>&</sup>lt;sup>20</sup> https://www.ymparisto.fi/fi-fi/rakentaminen/rakennuksen\_terveellisyys\_ja\_esteettomyys/rakennuksen\_esteettomyys (only in Finnish)

<sup>&</sup>lt;sup>21</sup> https://thl.fi/fi/web/vammaispalvelujen-kasikirja/vammaisuus-yhteiskunnassa/esteettomyys-ja-saavutettavuus (only in Finnish)

<sup>&</sup>lt;sup>22</sup> https://www.stat.fi/tietotrendit/artikkelit/2017/periytyvaa-eriytymista-vanhemmilla-selva-vaikutus-nuortenaanestamiseen/ (only in Finnish)

<sup>&</sup>lt;sup>23</sup> https://thl.fi/fi/web/hyvinvoinnin-ja-terveyden-edistamisen-johtaminen/osallisuuden-edistaminen/heikoimmassaasemassa-olevien-osallisuus/tutkimus/osallisuusindikaattori-mittaa-osallisuuden-kokemusta (only in Finnish)

# S = indicator for the state of inclusion and opportunities to influence

In the indicator, inclusion is defined as a sense of belonging and being heard, having control over one's own life and influence in society, and trust in one's own ability to exert influence.

The statements of the indicator are:

- I feel that my daily activities matter
- I receive positive feedback on my daily activities
- I belong to a group or community that matters to me
- I am needed by other people
- I have control over my own life
- I feel that my life matters
- I can pursue the things that matter to me
- I get help when I need it
- I feel that people trust me
- I have influence over some things in my living environment.

#### Perceived safety

Safety

Share of people who feel safe or very safe in their daily lives (%)<sup>24</sup>. Available classified according to gender and municipality.

The indicator shows the percentage of people over the age of 20 who feel their daily life is extremely safe or very safe. The indicator is based on the question: 'When answering the following questions, please consider the past two weeks. How safe do you feel in your daily life?' The response options were '1) not at all', '2) a little', '3) moderately', '4) very' and '5) extremely'. The indicator includes those who responded '4) very' or '5) extremely'.

#### S = indicator for the state of safety

Finland is considered a safe society. Various factors affect the population's sense of safety. In addition to their own experiences, a person's sense of safety can be affected by experiences of their loved ones as well as news about different crimes or accidents, or general insecurity. Feeling safe or unsafe is not always related to the likelihood of different threats. However, feeling unsafe is still a genuine feeling to the individual, and it may have concrete consequences. Feeling unsafe can impair a person's quality of life and affect their daily activities, e.g., by making them avoid spending time outside. According to studies, people with an uncertain or poor socioeconomic status are more likely

<sup>&</sup>lt;sup>24</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/3113

to feel unsafe. Women are generally more likely to feel unsafe than men. Belonging to an ethnic minority, a low income, a low level of education or an unsteady status in the labour market can increase feelings of unsafety.

#### Offences against life and health

Offences against life and health recorded by the police per 1,000 inhabitants<sup>25</sup>.

# P = indicator for pressure on safety

The data is available classified according to municipality. The indicator gives the number of offences against life and health reported to the police per thousand inhabitants. The indicator concerns violent offences reported to the police or involving a summary penal order or petty fine. A major share of these offences is not reported to the police. The offences are recorded by place of offence. Violent offences include murders, manslaughters and offences against life and health.

#### Accidents

#### P = indicator for pressure on safety

Most accidental deaths occur at home and during free time.

Accidents are the fourth largest cause of death in Finland. Accidents are classified as domestic and leisure accidents, traffic accidents, and occupational accidents. In 2018, 2,607 people died in an accident with accidental alcohol poisonings included in the number. Of these, 2,348 people died due to a domestic or leisure accident, 239 due to traffic accidents, and an assessed 20 people died from occupational accidents.

Injuries and poisonings are the second largest reason requiring specialised healthcare in a hospital and the third largest reason requiring a stay at a ward at a health station. The most common types of accidents in all age groups are trips and falls, but falls leading to death are more common in older population groups. Population ageing increases the risk of deadly falls in the population.

#### Livelihood Share of low-income households

This is a relative indicator of low-income households<sup>26</sup>. In accordance with Eurostat recommendations, low-income households are defined as households whose disposable income per equalised adult ('equivalised disposable income') is lower than 60 per cent of the equivalent median income of all households. The share of the population falling below this income limit is called the 'at-risk-of-poverty rate'.

<sup>&</sup>lt;sup>25</sup> https://sotkanet.fi/sotkanet/en/metadata/indicators/3113?

<sup>&</sup>lt;sup>26</sup> https://www.stat.fi/meta/kas/pienituloisuus\_en.html

#### S = indicator for the state of income

The euro-denominated limit for low income varies by year. The data is available classified according to municipality. Finland does not have an official national definition for low income or the poverty limit.

**Unemployment rate** (unemployment rate classified according to gender and age, unemployment of disabled people)

The unemployment rate<sup>27</sup> is the percentage of the unemployed from the total labour force, i.e., all employed and unemployed persons, of the same age. The unemployment rate of the total population is calculated as the percentage of 15-to 74-year-old unemployed persons from the total labour force of the same age. A long-term unemployed person is a person who has been continuously unemployed for 12 months or longer. The unemployment percentages are available classified based on gender, age and municipality.

#### P = indicator for pressure on livelihood

Unemployment is strongly linked to a person's livelihood, although employment does not always guarantee a sufficient level of income especially in areas with a high cost of living. The UN-Habitat also recommends monitoring the unemployment rate of people with disabilities, but this information is not currently available from the national labour force survey, on which this statistic is based.

#### Homelessness

In Finland people with no home (rental or owned) and living in the following are considered homeless: (i) outside, in a stairwell or in an emergency shelter; (ii) a residential home or accommodation establishment; (iii) a welfare home, a half-way house, a rehabilitation unit, a hospital or other institution; or (iv) temporarily at a friend's or a relative's home due to being homeless.

#### P = indicator for pressure on livelihood

A home is a basic need. Homelessness is mostly encountered in large cities. Inequality and the cost of housing impact homelessness among other things.

The Housing Finance and Development Centre of Finland (ARA) collects data on homelessness with a municipal survey each year. Despite its apparent accuracy, the data provided in numbers is indicative only, and some groups such as soon to be released prisoners and undocumented individuals are not included in ARA's figures.<sup>28</sup>

#### Educational structure of the population<sup>29</sup>

<sup>&</sup>lt;sup>27</sup> https://www.stat.fi/meta/kas/tyottomyysaste.html#tab1 (only in Finnish)

<sup>&</sup>lt;sup>28</sup> https://www.ara.fi/en-US/Materials/Homelessness\_reports/Report\_2021\_Homelessness\_in\_Finland\_2020(60242) and https://vvary.fi/asunnottomuus/ (only in Finnish)

<sup>&</sup>lt;sup>29</sup> https://www.stat.fi/meta/kas/koulutusrakenne\_en.html

Education, research, development and business (level of activity) Share of people over the age of 15 with a secondary education degree (%) and share of people over the age of 15 with a tertiary education degree (%). The data is available classified according to municipality, gender and age group. (Shown as different plots on the same graph)

#### S = indicator for the state of education

#### **Research and development expenditure**

Research and development expenditure<sup>30</sup> is monitored for businesses, the public sector and higher education institutions. The data reflects the resources used on research and product and process development. The data is available classified based on sector, region and sub-region. The statistic is based on data collected from businesses, universities, university hospitals, universities of applied sciences, research institutions, private NGOs, and other public sector organisations. Finland aims to increase its R&D expenditure to four percent of its GDP by 2030.

# R = indicator for societal response

#### Environmental goods and services sector

Business activities of companies producing and/or selling environmental goods and services Environmental products and goods are regulated by Regulation (EU) No 691/2011 of the European Parliament and of the Council<sup>31</sup> and the subsequent Commission Implementing Regulation (EU) 2015/2174<sup>32</sup> that obliges Member States to report to the Commission on the business development related to these products and services. Finland also collects the data and submits it to the Commission to be included in the EU's environmental economic accounts. This information is not yet available per municipality, which is unfortunate, since it is important to monitor the direction and success of businesses by municipality in this sector where future growth is anticipated to be strong.

# S = indicator for the state of activity

# Sustainability of public Employment rate finances The employment rate is the percentage of employed persons from the total population of the same age. The total employment rate is calculated as the percentage of employed persons between the ages of 15 and 64 from the total population of the same age. The data is available classified according to municipality. The Government Programme of Prime Minister Sanna Marin's Government sets the target of having an employment rate of 75 per cent by 2023.

<sup>&</sup>lt;sup>30</sup> https://tilastokeskus.fi/meta/til/tkke en.html

<sup>&</sup>lt;sup>31</sup> EU (2011). Regulation (EU) No 691/2011 of the European Parliament and of the Council of 6 July 2011 on European environmental economic accounts

<sup>&</sup>lt;sup>32</sup> EU (2015), Commission Implementing Regulation (EU) 2015/2174 of 24 November 2015 on the indicative compendium of environmental goods and services, the format for data transmission for European environmental economic accounts and modalities, structure and periodicity of the quality reports pursuant to Regulation (EU) No 691/2011 of the European Parliament and of the Council on European environmental economic accounts

# Debt/resident of public finance units

Public debt<sup>33</sup> can be examined with an indicator reflecting the loan stock of a municipality per resident, for example. It should be kept in mind that comparing the loan amounts does not necessarily provide a comprehensive picture of the overall financial situation of municipalities, since there are differences between the organisations and investment gaps of municipalities. In several municipalities, a municipal enterprise or company bears the final liability.

# *S* = indicator for the state of the sustainability of public finances

# Tax revenue

Municipal tax revenue comprises the municipal tax, a share of the corporation tax, the property tax and the dog tax. Municipalities independently decide their income tax rates and the amount of the property tax and dog tax within the limits of legislation. The government decides the rate of the corporation tax and directs part of it to municipalities as income.<sup>34</sup>

Tax revenue is an important part of a public finance unit's income. The amount of the revenue must cover the expenses of the public finance unit, but it cannot be so high that it reduces business activity or increases the shadow economy.

# R = indicator for societal response

<sup>&</sup>lt;sup>33</sup> https://www.kuntaliitto.fi/talous/kuntatalouden-tilastot/velkaantuminen-ja-investoinnit (only in Finnish) and https://www.stat.fi/til/kta/index\_en.html

<sup>&</sup>lt;sup>34</sup> https://www.exploreadministration.fi/abcs-of-municipal-finances/ https://www.exploreadministration.fi/municipalities/monitoring-of-key-figures-in-municipalities/the-state-of-municipal-finances/