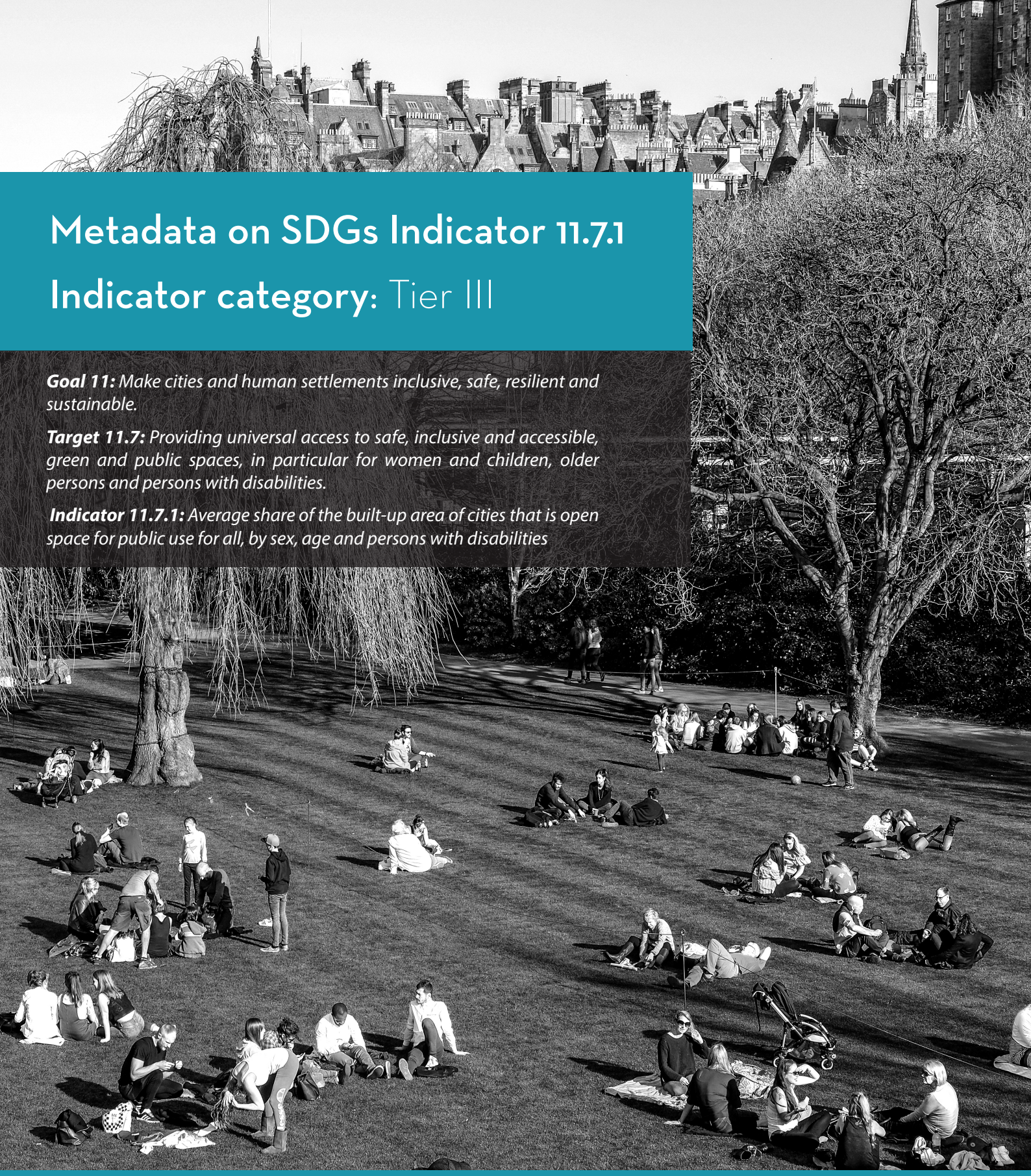

Metadata on SDGs Indicator 11.7.1

Indicator category: Tier III

Goal 11: *Make cities and human settlements inclusive, safe, resilient and sustainable.*

Target 11.7: *Providing universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.*

Indicator 11.7.1: *Average share of the built-up area of cities that is open space for public use for all, by sex, age and persons with disabilities*

LAST REVIEWED: MARCH 2018

UN HABITAT
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1. Definition and method of Computation

The value of public spaces is often overlooked or underestimated by policy makers, leaders, citizens and urban developers. There are a number of reasons for this, such as the lack of resources, or understanding or capacity to use public space as a complete, multi-functional urban system. Often the lack of appropriate enabling frameworks, weak political will and the absence of the means of public engagement compound the situation. Nevertheless, fundamentally, the lack of a global measurement indicator has hindered the local and global appreciation of the value of the open public spaces. The SDGs have for the first time provided a platform where open public spaces can be globally monitored.

The indicator 11.7.1 aims to monitor successfully the amount of land that is dedicated by cities for public space (open spaces and streets). Cities vary considerably in size, history, development patterns, designs, shapes and citizen's attitudes towards public spaces. Measuring how much public space a city has is only one part of measuring whether residents actually benefit from the space. For more than a decade, UN-Habitat has promoted the use of public space as an implementation and delivery strategy for projects on urban planning, housing and slum upgrading, governance and urban safety, basic services and even post-conflict reconstruction.

In 2011, UN-Habitat's Governing Council gave a clear opportunity and direction through Resolution 23/4 to consolidate the agency-wide work on public space. UN-Habitat's Member States mandated the agency to develop an approach that promotes the role of public space in meeting the challenges of our rapidly urbanizing world, and to coordinate various global partners and experts on public space and to directly assist cities in their initiatives on the public space management and monitoring. This mandate led to the initiatiation of the methodological work on global monitoring and reporting on open public spaces.

In the 2030 SDGs agenda, indicator 11.7.1 on access to open public space provides a global opportunity to further monitor public spaces in cities. The indicator requests for data collection at the city level, to be in line with other data being collected at the level of this unit of analysis. Several surveys of city structures from different regions identified that the data on this indicator should continue to be collected at the city level and above.

The use of "city" in this context appreciates that the name is used to refer to different things in different parts of the world. The application of a universal definition of a city is thus one that includes broad urbanized areas which appreciate unique country definitions, and should include towns, urban agglomerations, etc. For clarity in the operational area, the terms "city proper" and "urban extent" have been developed to address emerging challenges of continuous growth, which traverses different policy development/ action areas.

Urban extent: In the context of monitoring goal 11.7.1, the urban extent is used to refer to the entire area defined as 'urban' in the global city definitions approaches, thus, Urban built-up area and Suburban built-up area; and High-density cluster/urban centre and Urban cluster. Initial analysis shows that this area encompasses the city proper.

City Proper: City Proper is used in this context to refer to the prevailing official demarcation at the time of data collection. In principal, this includes official boundaries for city, metropolitan area, municipality, etc., where such exist. In urban setups where such demarcations are inexistent, the urban extent is used, with operational boundaries agreed on with city authorities.

In addition, standard concepts and definitions of key elements of public open space are needed for purposes of global reporting. Of utmost importance is the definition of public spaces or open public spaces that is most appropriate for monitoring SDG 11.7 target globally.

Trafalgar Square, London © Wikipedia Commons

UN-Habitat and its partners have continued to refine and work on global definitions that have guided the work of global monitoring of open public spaces. The emergence of a global indicator on open public space further invigorated the already ongoing work, and the agency has provided more clarity on concepts, definitions and methodologies for global monitoring. In the last two years, UN-Habitat organized several consultations and expert group meetings, which specifically addressed the outstanding issues on definitions and concepts as well as laid down a work plan for developing Member States capacities to monitor open public spaces.

2. Concepts and definitions for Global monitoring of Open public space

Indicator 11.7.1 has several interesting concepts that required global consultations and consensus. These include; built-up area, cities, open spaces for public use, etc. As a custodian agency, UN-Habitat has worked on these concepts along with several other partners.

City: A range of accepted definitions of the "city" exist, from those based on population data and extent of the built-up area to those that are based solely on administrative boundaries. These definitions vary within and between nations, complicating the task of international reporting for the SDGs. As partners, we organized global consultations and discussions to narrow down the set of meaningful definitions that would be helpful for the global monitoring and reporting process. The global consultations narrowed down to two city definitions, both emanating from joint work conducted by teams from New York University and European Commission-JRC. These are available elsewhere with full documentation of the pros and cons for each. For this indicator, partners resolved to work with the City as defined by its Urban extent (built-up and urbanized open space).

City as defined by its Urban extent (built-up and urbanized open space)

The definition of urban extent described in this note was developed to facilitate the study of a global sample of 200 cities in the production of the Atlas of Urban Expansion: 2016 Edition. It relies on the analysis of satellite imagery to define the boundary of the city morphologically – based on the density of structures, not on the density of population, which we know to be highly variable in different contexts. It supposes that non-residential zones should be thought of as part of the city, along with open spaces such as parks and small amounts of undeveloped land, in addition to residential areas that report populations for the census.

Urban extent is defined as the total area occupied by the built-up area and the urbanized open space. The built-up area is defined as the contiguous area occupied by buildings and other impervious surfaces.

Landsat imagery is used to identify and classify the built-up pixels into 3 types depending on the share of built-up density (urbanness) in a 1km^2 circle of a given building:

- Urban built-up area: pixels where the walking distance circle has a built up density greater than 50%.
- Suburban built-up area: pixels where the walking distance circle has a built up density between 25%-50%. It also includes subdivided land, whether it is wholly unbuilt or not.
- Rural built-up area: pixels where the walking distance circle has a built-up density of less than 25% and that are not on subdivided land.

The urbanized open space (mainly refers to unbuilt areas including open countryside, forests, crop fields, parks, unbuilt urban areas, cleared land) is classified into 3 types:

- Fringe open space consists of all open space pixels within 100 meters of urban or suburban pixels;
- Captured open space consists of all open space clusters that are fully surrounded by urban and suburban built-up pixels and the fringe open space pixels around them, and that are less than 200 hectares in area; and
- Rural open space consists of all open spaces that are not fringe or captured open spaces.

The fringe open space and captured open space together, make up the urbanized open space in a given study area. In other words, the urban extent consists of all the buildings and the small open space areas (<200 ha) that are surrounded by buildings and the open space fringe that is within 100 meters of urban and suburban areas (i.e. where built up area is more than 25%).

The proposed approach will help collect data at the urban extent level, then clip results to the city proper level for efficient workflow. The justification for this proposed derivation is that:

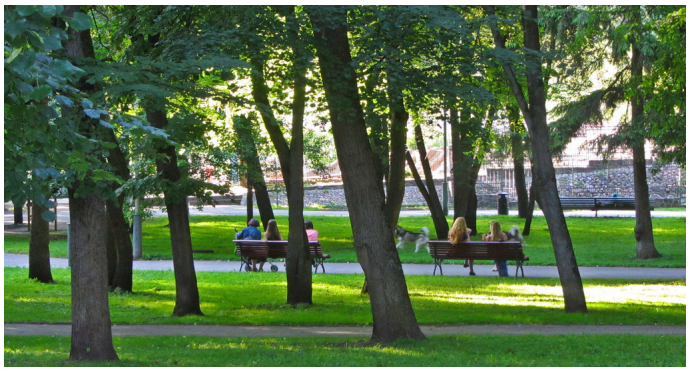
- Data collection has traditionally been done within specified demarcations (be it city, municipality, metropolitan region, etc.) and thus the need for comparable information.
- Validation of data through conventional collection means (e.g. censuses) will be easier when the unit of collection is similar
- Usability of the data for informed decision making will be enhanced when information is available at the operational (governance, decision making) level.
- Collection of data on urban extent is a good indicator of regional development and will inform the higher level decision making (e.g. regional policy development).

Public space: The Global Public Space toolkit defines Public Space as all places publicly owned or of public use, accessible and enjoyable by all, free and without a profit motive, categorized into streets, open spaces and public facilities.

For the purpose of monitoring and reporting on indicator 11.7.1, Public space is defined as all places of public use, accessible by all comprises open public space and streets. Public space in general is defined as the meeting or

gathering places that exist outside the home and workplace that are generally accessible by members of the public, and which foster resident interaction and opportunities for contact and proximity. This definition implies a higher level of community interaction and places a focus on public involvement rather than public ownership or stewardship. The elements, which can be considered as open public space, are:

- Parks: Open space inside an urban territory that provide free air recreation and contact with nature. Their principal characteristic is the significant proportion of green area.



Parks © Flickr/Tery14

- Recreational areas: public areas that contribute to environmental preservation. Their main functions can be both ornamental and passive recreation. These include areas such as playground, riverfronts, waterfronts, public beaches, etc.

Recreational area © Flickr /Ramerk_de

- Civic parks: Open space created because of building agglomeration around an open area, which was later transformed into a representative civic area. They are characterized by considerable nature, specifically gardens and a good place for cultural events and passive recreation.

Palm Desert civic center © tripadvisor.com

- Squares and Plazas: Open spaces created because of building agglomeration around an open area. Its main characteristics are the significant architectonic elements and interaction between buildings and the open area. Squares are usually public spaces relevant to the city due to their location, territorial development, or cultural importance.

Streets are defined thoroughfares that are based inside towns, cities and neighbourhoods most commonly lined with houses or buildings used by pedestrians or vehicles in order to go from one place to another in the city, interact and to earn a livelihood. The main purpose of a street is public interaction. The following elements are considered as streets space: *Streets, avenues and boulevards, pavements, passages and galleries, Bicycle paths, sidewalks, traffic island, tramways and roundabouts*. Elements excluded from street space include plots (either built-up), open space blocks, railways, paved space within parking lots and airports and individual industries.

Streets as Public Spaces. *They are Streets, avenues and boulevards, Squares and plazas, Pavements, Passages and galleries, Bicycle paths. These are public spaces in the fullest sense of the word because they are publicly owned and maintained, accessible and enjoyable by all without charge and at all hours, day and night.*

Public Open Spaces. *A second category comprises green open public spaces – the urban features that instinctively come to mind when we think of public spaces and that we use daily.*

They include Parks, Gardens, and Playgrounds, Public beaches, Riverbanks and waterfronts.

These spaces are also available to all without charge and are normally publicly owned and maintained. In many cases, however, they are accessible during daylight hours only.

Public Urban Facilities. *This third category of conventional public spaces comprises high maintenance public facilities that are publicly owned and maintained and are accessible to users without any charge, such as: Public libraries, Civic/ community centers, Municipal markets, Public sports facilities. In many cases, these facilities are only accessible during daylight hours or operating hours and are not included in the measurement of SDG indicator 11.7.1.*

Source: Global Public Space Toolkit: From Global Principles to Local Policies and Practice.

Land allocated to streets: Refers to the total area of urban surface that is occupied by all forms of streets (as defined above). This indicator only includes streets available at the time of data collection and excludes proposed networks

Borehamwood, England © Street View Screenshot.

Methods for Computing the Proposed Indicator:

The method to estimate the area of public space has been globally piloted in over 400 cities and this follows a series of methodological developments that go back to the last 7 years. The finalized methodology is a four-step process:

- Spatial analysis to delimit the built-up area of the city as described earlier;
- Estimation of the total open public space and;
- Estimation of the total area allocated to the streets;
- Local data collection to compute the amount of land allocated to public open spaces.
- Disaggregate data to city proper level (in cases where the urban extent is larger than the city proper area)

a. Spatial analysis to delimit the built-up area.

Built-up areas are a true reflection of multiple (urban) activities, and the presence of populations; with higher built-up density often reflecting higher activity/population concentrations. To monitor and report on 11.7.1, the main focus will be the built-up area defined as the contiguous area occupied by buildings and other impervious surfaces. To compute this component in support of the indicator, follow these steps:

1. Define a study area – starting from the central business district, plot the existing city boundaries as well as the entire built-up extent (which often extends beyond the administrative boundaries)
2. Download freely available LANDSAT imagery for dates that correspond to those of the available census for the city.
3. Classify LANDSAT imagery into built-up, not built-up, and water using a GIS or image processing software.
4. Assess each of the resultant built-up pixels. Place a 1km circle around each built-up pixel and calculate the share of pixels in the circle that are also built-up. If >=50% of the pixels in the circle are built-up, the pixel is classified as Urban. If >=25% and <50%% of the pixels in the circle are built-up, the pixel is classified as Suburban. If <25% of the pixels in the circle are built-up, the pixel is classified as Rural.
5. Combine contiguous urban and suburban pixels, centered on the CBD, to form an urban cluster of the built-up area.

Note: The 'city proper' boundary should be defined by the official administrative demarcation for the area.

b. Computation of total area of open public space.

Mapping and calculation of the total areas of open public space within the defined urban boundaries is based on the built-up area. To compute this component of the indicator, follow these steps:

1. An inventory of Open Public Spaces should be the initial source of information, additional legal documents, land use plans and other sources of information to complement the information.
2. Alternatively, since this inventory is often not available, using satellite imagery/data identify Potential Open public spaces.
3. Digitize Potential Open public spaces.
4. Field work to verify the identified spaces and assess quality based on the definition above to create an inventory of open public spaces.
5. Calculate the total area of open public space.

c. Computation of land allocated to the streets.

Where street data by width and length fields is available/ specified, the following methodology could be used:

1. Select only the streets included in the urban area (or clip streets to the working city boundary)
2. From GIS (or alternative software), calculate the total urban surface allocated to the streets by multiplying the length by width
3. Divide the number of square kilometres of urban streets by the total square kilometres of urban surface as defined by working boundary; and multiply the result by 100 to get the proportion of the city area allocated to the streets

$$\text{Land allocated to streets} = 100 \left[\frac{\text{Total surface of urban streets}}{\text{Total surface of urban area}} \right]$$

An alternative technique for computing land allocated to the streets is one that adopts sampling principles. An approach that uses the Halton sampling sequence is recommended, specifically because it generates equidistant points, increasing the degree of sample representativeness. To compute LAS using this method, follow the following steps:

1. Using the built-up area boundary identified earlier, generate a Halton sequence of sample points (Halton sequence refers to quasi-random sequence used to generate points in space that are ex-post evenly spread (i.e. Equidistant).
2. Buffer the points to get sample areas with an area of 10 hectares each.
3. For each of the sample areas, check the completeness of the street network, define and delimit streets as per the definition.
4. Calculate the land allocated to street for each sample area using the following formula:

$$\text{Land allocated to streets} = \frac{\text{Total street area}}{\text{Circle area}}$$

The average of LAS from each point is the total LAS for the city/ urban extent.

5. To calculate LAS for the city proper only, generate sampling points using the official boundary demarcation and repeat steps 1 – 5.

NOTE: For defining the sample size in Halton sequence, the density of the points depends on the study area size. For example, in large study areas of more than 20 km2, a density of one circle per hectare is used while in small study areas of less than 20 km2 a density of 0.5 circle hectare is used.

d. Data collection on identifying open public spaces in every city

A tool for detailed data collection was developed through a consultative process. Local researchers who are identified through the local urban observatories that are linked to the UN-Habitat managed global urban observatory networks use this tool.

This tool was developed based on earlier work linked to an international guide on monitoring open public spaces, which was developed by UN-Habitat and partners: <https://unhabitat.org/wpontent/uploads/2015/10/Global%20Public%20Space%20Toolkit.pdf.>

The data collection tools help collect data on among several issues, background information on the public open space, years it was created, management structures, access, safety, opening hours, etc. This additional data provide more information on relevant values for disaggregation such as access issues linked to age, gender and disabilities as requested for by the indicator.

The tool is available at (https://ee.kobotoolbox.org/x/%23YbIR).

Finally, UN-Habitat and other partners worked on a multi-country capacity assessment for several cities on the ability and preparedness to report on 11.7.1 which returned a good level of confidence: In total, 83% of cities are ready to continuously collect data on this indicator with some additional level of support on guides and manuals on how this should be done.

The final computation of the indicator is done using the formula:

$$\text{Share of the built-up area of the city that is open space in public use(\%)} = \left[\frac{\text{Total surface of open public space+Total surface of land allocated to sreets)}}{\text{(Total surface of built up area of the urban agglomeration)}}\right] \times 100$$

3. Rationale and interpretation

The Right to the City. By recognizing and developing the positive potential of their public spaces, cities can enhance safety and security, create economic opportunity, improve public health, and create diverse public environments and public democracy. In a century where the right to the city movement is increasingly being recognized, it is important to develop cities where people of all income groups, social classes and ages can live safely, happily and in economic security.

Urban Planning for City Leaders (UPCL). UN-Habitat has put forward a list of recommended steps to be followed in securing better public spaces in cities. These are contained in the UN-Habitat Publication "Urban Planning for City Leaders (2013)" under the chapter 'Define and Enhance Public Space', in which four broad categories of intervention are presented:

- Secure sufficient public space in advance
- Plan a system of public spaces
- Reap the benefits of well-designed streets
- Plan green public spaces

The Street as Public Spaces - Drivers of Prosperity. Furthermore, the issue of the street as an important public space has been explored in depth in a recently published technical report entitled Street as Public Spaces-Drivers of Prosperity (2013). The research looked at 30 cities spread globally and found evidence to prove that prosperous cities are those that have allocated sufficient land to street development (with proper layout), including sufficient crossings along an appropriate, lengthy network

Public space and other intergovernmental bodies. It is also important to note that other intergovernmental bodies, in addition to the UN-Habitat's Governing Council, have stressed the importance of public space for sustainable urban development. As early as 2007, the Ministers responsible for urban development of the European Union adopted the Leipzig Charter on Sustainable European Cities. The charter contains a strong and explicit statement in support of public space:

The United Cities and Local Governments (UCLG) have also established an Urban Strategic Planning Committee, which has taken the opportunity to network, learn and develop a body of knowledge on public space.

Public spaces - including streets - are, and must be seen as, multi-functional areas of social interaction, economic exchange and cultural expression among a wide diversity of people. It is for urban planning to establish and organize these public spaces, and for urban design to facilitate and encourage their use, in the process enhancing a sense of identity and belonging. Safety and security are important dimensions to be considered in any such design, together with vital infrastructure (water, energy and communications). Important conditions for such planning to be successful are the contextual existence of good governance and management arrangements, as well as viable mechanisms to redirect part of the value gains into the nurturing of good quality public space. The street network is the integrative tissue that binds cities together. It organizes the geographic space of cities, integrates them both as job markets and as local political spaces.

Multifunctional street, Seattle © parklets.files.wordpress.com

Cities that are walkable and transit-friendly require a highly connected network of paths and streets around small, permeable blocks. A tight network of paths and streets offering multiple routes to many destinations that also make walking and cycling trips varied and enjoyable. This has clear implications in making cities more energy efficient.

For cities to be vibrant and safe places, it is important to think of them as systems of interdependent parts and complex connections, as interactive and social spaces. However, many public areas have been gradually forgotten; they are no longer safe living spaces that people enjoy. Reclaiming urban spaces for people is part of how we can humanize our cities and make our streets and public areas more communal. Public spaces are often more than anonymous places that can be replaced by one another: the meetings and exchanges that occur there affect our relationships with each other, giving meaning to our communities and urban landscapes.

Cities function in an efficient, equitable, and sustainable manner only when private and public spaces work in a symbiotic relationship to enhance each other. In optimal conditions, they need to be secured and laid out in advance of urbanization to ensure orderly urban expansion. In existing cities, there is a need to revise and expand the ratio of public space in cities to make them more efficient, prosperous and sustainable and are needed in adequate amounts. Uncontrolled rapid urbanization creates disorderly settlement patterns with dangerously low shares of public space. Many cities in developed countries are also experiencing a dramatic reduction of public space.

This indicator provides information about the amount of open public areas in a city. Cities that improve and sustain the use of public space, including streets, enhance community cohesion, civic identity, and quality of life. A prosperous city offers a profusion of public goods and develops policies and actions for a sustainable use of, and equitable access to, 'the commons', such as public space. It is in any city's best interest to promote public goods such as transport, green areas, spaces and 'urban commons' such as safety, security and political participation to enhance quality of life and shared prosperity. The size and quality of a city's overall public space act as a good indicator of shared prosperity.

"The quality of public spaces, urban man-made landscapes and architecture and urban development play an important role in the living conditions of urban populations. As soft locational factors, they are important for attracting knowledge industry businesses, a qualified and creative workforce and for tourism. Therefore, the interaction of architecture, infrastructure planning and urban planning must be increased in order to create attractive, user oriented public spaces and achieve a high standard in terms of the living environment, a "Baukultur". Baukultur is to be understood in the broadest sense of the word, as the sum of all the cultural, economic, technological, social and ecological aspects influencing the quality and process of planning and construction. However, this approach should not be limited to public spaces. Such a "Baukultur" is needed for the city as a whole and its surroundings. Both cities and government must make their influence felt. This is particularly important for the preservation of architectural heritage. Historical buildings, public spaces and their urban and architectural value must be preserved"

McLane Stadium © Waco, TX amphitheater and public open space

4. Disaggregation

- Location (intra-urban)
- Qualities of the open public space (safe, inclusive, accessible, green)
- The share of built-up area that is green open space in public use
- The share of built-up area is universally accessible open space in public use, particularly for disable persons.
- Type of human settlements.
- Typology of public space.

5. Sources and data collection processes

Satellite imagery (open sources), documentation outlining publicly owned land; community-based maps are the main sources of data.

- For estimating the total surface of Built-up area. Satellite imagery: Use of existing layers of satellite imagery ranging from open sources such as Google Earth and US Geological Survey/NASA imagery Landsat to more sophisticated and higher resolution land cover data sets. Images are to be analyzed for the latest available year.
- For the Inventory of open public space. Information can be obtained from legal documents outlining publicly owned land and well-defined land use plans. In some cases, where this information is lacking, incomplete or outdated, open sources, informants in the city and community-based maps, which are increasingly recognized as a valid source of information, can be a viable alternative.
- The share of land in public open spaces cannot be obtained directly from the use of high-resolution satellite imagery because it is not possible to determine the ownership or use of open spaces through remote sensing. However, fieldwork to validate and verify the open spaces derived from satellite imagery helps to map out land that is for public and non-public use.

6. Comments and limitations

Gaps in the currently available data for monitoring target 11.7 along with some recommendations of upcoming opportunities for filling such gaps are provided below. For many cities, an inventory of public spaces is being created for the first time, while other cities have inventories that are not up-to date.

UN-Habitat has developed tools, programmes and guidelines to assist cities in measuring, and accounting for the available public space in cities. Some cities in the developing world lack formal recognized public space that are publicly maintained, and as such, some countries are faced with satellite imagery that does not match well with community-based mapping exercise. For many such cases, data reconciliation are done locally to harmonize these two data collection processes.

Similarly, types of open public space vary across cities; however, the types listed in this indicator are usually the most accepted ones and so far, the data collection has revealed that there is no much overlaps and confusions on these well-defined global open public spaces. The indicator quantifies the amount of open space in public use in cities, but also attempts in minimal ways to capture the quality of the space that may impede its proper use. The qualitative data collected on this indicator strengthens the evidence that an open space exists, and that its public use is guaranteed, to allow city authorities and other stakeholders to further improve its quality and increase its use.

Plaza de Mayo, Buenos Aires, Argentina © 10mosttoday.com

7. Current data availability/indicator tier

Data for this indicator is already available for several cities, which are part of several global data collections initiatives/ processes as summarized below:

- UN-Habitat's City Prosperity Initiative (CPI): This initiative has been collecting data for this particular indicator in over 450 cities distributed across Latin America & Caribbean, Africa, Asia and Europe.
- The Global Public Spaces Programme (GPSP) under UN-Habitat has mapped over 120 cities where data on open public spaces was collected in close collaborations with cities and local governments, NSOs and urban observatories using methodology for 11.7.1.

- UN-Habitat and New York University conducted a worldwide mapping of access to public open spaces that covered the global sample of 200 cities. Data was collected using latest methodology for indicator 11.7.1

  Qualitative data on public spaces in cities is being collected locally through a global tool developed (https://ee.kobotoolbox.org/x/#YbIR).
- UN-Habitat and regional partners also conducted a multi-country capacity assessment for several cities on the ability and preparedness to report on 11.7.1.
- **Table 1. Global set of countries and cities with public wpace data available**

Region	Countries covered as of October 2017	Cities or urban centers covered as of October 2017
Latin America and the Caribbean	14	412
Eastern and South-Eastern Asia	13	228
Northern Africa and Western Asia	11	92
Sub-Saharan Africa	17	29
Central and Southern Asia	4	17
Australia and New Zealand	2	6
Europe and Northern America	31	44

Source: UN-Habitat: Global Urban Observatory database 2017.

8. Responsible entities

UN-Habitat is the lead agency on the global reporting for this indicator and as such, lead the coordination of several partners who are contributing to this indicator. This includes NSOs, New York University, ESRI, FAO, UNGGIM, UCLG, Local governments departments, European Commission, UN regional commissions, KTH University-Sweden, Urban Observatories, etc. UN-Habitat and all our partners including other private sector firms and UN regional commissions are leading the efforts of building national and city-level capacities to monitor and report on this indicator.

In the last 5 years, UN-Habitat and other partners have held several consultations to help improve the methodological work of this indicator:

a) Internal consultations within UN-Habitat and the review of several UN-Habitat toolkits of particular relevance to the subject of public space have provided an initial base of information on concepts and definitions. Lessons learned by UN-Habitat in field projects devoted to public space have proven particularly valuable.

b) A second important source and point of reference has been the Charter of Public Space adopted by the Biennial of Public Space, containing simple and actionable principles for the creation, management and enjoyment of public spaces in cities.

c) A third set of sources has been the contributions offered by a team of international experts, both during and immediately following the Expert Group Meeting on Public Space held in Rome in 12-14 January 2014. Additionally, the contributions of over 300 practitioners from over 40 countries during the series of International Conferences on the Future of Places, which developed a set of key messages in advancing the public space agenda at the global level.

d) A fourth source has been global consultative meetings organized after the adoption of the 2030 agenda in line with the SDG requirements for indicator 11.7.1 and global initiatives that have supported the data collection of this indicator. Specifically, these were:

   i) The first EGM in October 2016 focused mainly on methodological refinements and on concretising the institutional partnership arrangements for capacity development and data collection. Representatives from the NSOs, Urban Observatories, European Union, World Resources Institute, United Cities and Local Governments, Arab Urban Development Institute, World Health Organization, ESRI, NYU, among others participated in this EGM.I.

   ii) The second EGM held in February 2017 focused on the challenges of data collection and review of preliminary data made available through the efforts of collecting city-based monitoring the human settlement data at local levels.

      - It also focused on the technical aspects of computing the indicator using the proposed methodology. This helped in identifying the challenges and opportunities of improving the methodology as well as strategies to scale up and capacity building for NSOs.
      - Representatives attended the meeting from Urban Observatories, European Union, World Resources Institute, United Cities and Local Governments, ESRI, Arab Urban Development Institute, UNESCO, Women in Cities (WICI), Universities and private planning firms, senior statisticians from governments, academic institutions, urban planners, etc.

e) Within the City prosperity initiative - data for this indicator has been collected for over 400 cities globally. See also: http://cpi.unhabitat.org.

9. Data collection and data release calendar

The monitoring of the indicator can be repeated at regular intervals of 3-5 years, allowing for three reporting points until the year 2030. However, annual updates to the existing database will be done and hence data releases based on annual updates will be available every year. **Monitoring in 3-5-year intervals** will allow cities to determine whether the shares of open public space in the built-up areas of cities are increasing significantly over time, as well as deriving the share of the global urban population living in cities where the open public space is below the acceptable minimum.

10. Treatment of missing values

All qualifying cities/countries are expected to fully report on this indicator more consistently following implementation and full roll out of this methodology. In the early years of this indicator, we had data gaps due to no data being collected yet, as opposed to missing data. In most of cases, missing values to-date reflect a non-measurement of the indicator for the city. However, because national statistical agencies will report national figures from a complete coverage of all their cities, some cities may take longer to be measured or monitored. As a result, UN-habitat has worked with partners to develop a concept of applying a National Sample of Cities. With this approach, countries will be able to select a nationally representative sample of cities from their system of cities, and these will be used for global monitoring and reporting purposes for the period of the SDGs. The fully developed methodology on this concept has been rolled out and countries that are unable to cover the full spectrum of their cities are already applying this approach.

See: https://unhabitat.org/national-sample-of-cities/

11. Sources of differences between global and national figures

Applying the proposed methodology to an entire globe of different cities will be challenging, but there are some basic principles that cities can use to measure public space uniformly. Cities can inventory the spectrum of spaces, from natural areas to small neighborhood parks owned by different government entities. For example, in some cities, cemeteries are publicly available spaces run by the city park and recreation department. The team has developed a basic methodological guide and tools, which have enabled national statistical agencies and cities to apply these methods in a standard way and compile a comparable inventory of open public spaces.

Colorado Amphitheatre © Flickr / David Flumer.

12. Regional and global estimates and data collection for global monitoring

N/A

13. References

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