



Questions & Answers Part 3

Please type your questions in the Question Box. We will try our best to get to all your questions. If we don't, feel free to contact Argyro Kavvada (argyro.kavvada@nasa.gov) or Dennis Mwaniki (dennis.mwaniki@un.org).

Question 1: How do you account for the road area considering this is usually represented linearly?

Answer 1: The process was done by taking the area of influence which is given by the width of the road. In Colombia, the average road width in urban areas is 3.5 meters per lane.

Question 2: Can this methodology work for other indicators at the city level or it is just for SDG 11? for example, water bodies?

Answer 2: This methodology focused on cities. Water classification is done in a general way, to avoid adding these areas to the built-up area.

Question 3: I have a question. Sentinel-2 satellite images has 10m resolution that is 32.8 ft. Below, 32.8 ft width roads can't be identified on the images. In my city a lot of roads/streets are within 32.8 ft. How to calculate the roads area then?

Answer 3: The identification of the road area was done combining the Sentinel-2 imagery with other vector type sources, such as the census blocks boundary from the National Geostatistical Framework. These block boundaries helped to detail the overall classification from the satellite imagery.

Question 4: Is there any article that we could reference regarding the methodology, and all the steps involved, so I could apply them to my study area?

Answer 4: Yes, the indicator's methodological sheet and access to the indicator's geo-viewer are available on the DANE page (in Spanish). And also, in the use cases section of the EO toolkit portal you can find a document and a video describing the project in more detail. I share the access links

<https://www.dane.gov.co/index.php/estadisticas-por-tema/estadisticas-experimentales>

<https://ods-dane.hub.arcgis.com/pages/ods11>



<https://eo-toolkit-guo-un-habitat.opendata.arcgis.com/pages/colombia-use-case-1171>

Question 5: In the Dane example, as far as I understand, the information is focusing on physical accessibility of public areas. Is there any way, enhancing the use of this method, to also gain insights on qualitative assessment of the public space (e.g. safety, differentiation between part of the public space reserved for vehicles and part available for pedestrian use...)? Which set of data or additional data collection would this require?

Answer 5: The methods used to determine accessibility, such as the one recommended by UN-Habitat for this indicator, focus on general accessibility metrics, e.g., areas around public spaces that are within a defined distance using a particular transport method. In the case of the 11.7.1 SDG, the criterion is accessibility within 400 meters, walking.

Question 6: If this question still fits today (maybe it suited better in previous sessions?) To what degree are applications, monitoring, mapping, etc. of urban Ecosystem services / Ecosystem-based Adaptation measures implemented in the EO toolkit for sustainable cities at the current state? Do you plan to bring these tools into the toolkit?

Answer 6: Currently the Toolkit shares data products, tools and use cases of relevance to SDG 11 indicators. Within the Group on Earth Observations community we are discussing the development of additional Toolkits for other SDGs — in addition, a Risk Toolkit is currently in development — as well as developing “bridges” between EO Toolkits for integration purposes (e.g., connecting the Urban Toolkit with aspects of disaster risk reduction and the Risk Toolkit — for example, flood monitoring/ DRR activities in cities — and in similar fashion, making connections with ecosystem services and nature-based solutions.

Question 7: How do I calculate the built-up land footprint of a particular city? Can you please provide a link where the calculation is easy to understand step by step?

Answer 7: Currently, DANE has available to the general public (in Spanish) the materials associated with the calculation of the indicator on our Web page.

<https://www.dane.gov.co/index.php/estadisticas-por-tema/estadisticas-experimentales>

However, to determine the urban footprint, we use supervised and unsupervised image classification methods using Machine Learning techniques.



You can also access the 11.3.1 training module by UN Habitat, available here:
https://unhabitat.org/sites/default/files/2021/08/indicator_11.3.1_training_module_land_use_efficiency.pdf .

In the Toolkit, we have a number of data sets that help estimate built-up area. [Copernicus Imperviousness](#), [GHS-BUILT](#), [Global 30m Impervious Surface Map](#), [Global Artificial Imperviousness Areas](#), [Global Man-Made Impervious Surface](#) and [GlobeLand 30](#). These data sets are useful for informing for example the numerator (annual land consumption rate) of indicator 11.3.1 (sustainable urbanization).

We also plan to integrate step-by-step guidance (Learn Paths) in the Toolkit on how to leverage Earth observations to compute indicators such as 11.3.1 and others.

Question 8: I have been finding it very difficult to extract satellite images of any area or region in my country using Google Earth Engine. Is there any other alternative source to obtain Satellite images?

Answer 8: Take a look at the tools that are part of the Toolkit,

<https://eotoolkit.unhabitat.org/pages/eo-tools>

<https://scihub.copernicus.eu/dhus/#/home> (Copernicus Open Access Hub)