Open Spatial Data to Reporting on Accessibility of Urban Green Spaces

Joanna Nowak Da Costa (Poland) and Conrad Bielski (Germany)

Key words: Low cost technology; Remote sensing; Spatial planning; open data; sustainable development goal; urban green spaces; inclusive spaces

SUMMARY

The United Nations Sustainable Development Goal (SDG) 11 includes the target 11.7 – to provide universal access to safe, inclusive and accessible, green and public spaces. In order to demonstrate that regions and countries are working towards reaching this goal by 2030, the input data should be of high quality and available to all stakeholders including citizens. One of the first steps to reaching such a target is an understanding of the location of the green and public spaces within urban areas and linking them to both geospatial information as well as other relevant statistics which can be used to improve accessibility and inclusivity.

Not all cities have access to geospatial information that can help them identify green public spaces. The Copernicus Sentinels program provides a wealth of Earth Observations (EO) freely available and acquiring regular imagery around the globe. Specifically, the Sentinel-2 optical platform can be used for the creation of fine spatial resolution maps detailing green urban areas. In our study, we will compare different open datasets in order to understand whether they can be applicable to the reporting of SDG 11.7 and produced for stakeholders who may not have access to the needed geospatial information. Our goal is to understand whether EO based urban green products can be used for monitoring and adequately reporting related to SDG 11.7. The proposed method is based on open EO data and Copernicus geospatial data which is available throughout Europe. We test the information for cities in Poland and apply spatial analysis tools, simple statistics and cartographic presentation methods which are also freely available in order to compare and contrast the open EO based geospatial information with those of the administration. The result of testing the methods to cities in Poland, the patterns and trends observed will provide a basis for best practices of reporting this particular SDG. For example, the dependence of access to inclusive green areas on the distance from different city landmarks or transit points. Our work highlights the following important characteristics: (i) low-cost and easy to implement because it uses publicly available data and

common algorithms for spatial analysis; (ii) universally accessible because it can be used both for reporting and monitoring of progress, and as an indicator of significant problem areas, i.e. those with the lowest access to inclusive green areas; (iii) educational because it supports the idea of open data and open science. Consequently, we hope that our results will improve the use of available open spatial data to rapidly monitor the achievement of this SDG target regardless of geographical location and spatial data resources of any UN member country.