Indicator thematic area
SDG
Indicator group
Land Use efficiency
Attribute ID
SD_LUE_LPR_XXXX_YYYY
Indicator Name
Land Use Efficiency
Units
Dimensionless
Data Source
Melchiorri, M.; Pesaresi, M.; Florczyk, A.J.; Corbane, C.; Kemper, T. Principles and Applications of the Global Human Settlement Layer as Baseline for the Land Use Efficiency Indicator—SDG 11.3.1. ISPRS Int. J. Geo-Inf. 2019, 8, 96. https://doi.org/10.3390/ijgi8020096 SDG indicator metadata (Harmonized metadata template - format version 1.1), Metadata-11-03-01.pdf (un.org)
Indicator description
Land Use efficiency is the ratio between the Land Consumption Rate and the Population Growth Rate
Methodology
$$LUE = \frac{Land\ Consumption\ rate}{Population\ Growth\ rate}$$
Methodology Short
Definition formula
Temporal Coverage
1975-1980, 1980-1990, 1990-2000, 2000-2010, 2010-2020, 2020-2030, 1975-2020, 1990-2020, 2000-2020
Uncertainties & Best practices
Values less than -5 are indicated as '< -5' and values greater than 5 are indicated as '>5' in the dataset.

Indicator thematic area
SDG
Indicator group
Land Use Efficiency
Attribute ID
SD_LUE_LCR_XXXX_YYYY
Indicator Name
Land Consumption Rate
Units
Dimensionless
Data Source
Melchiorri, M.; Pesaresi, M.; Florczyk, A.J.; Corbane, C.; Kemper, T. Principles and Applications of the Global Human Settlement Layer as Baseline for the Land Use Efficiency Indicator—SDG 11.3.1. ISPRS Int. J. Geo-Inf. 2019, 8, 96. https://doi.org/10.3390/ijgi8020096 SDG indicator metadata (Harmonized metadata template - format version 1.1), Metadata-11-03-01.pdf (un.org)
Indicator description
Land Consumption Rate is defined as the share of the difference between total built-up in two years over the total built-up in the past year, divided by the difference between the two years. The total built-up is calculated as total built-up in the urban center.
Methodology
$$LCR = \frac{BU_TOT_t - BU_TOT_{t-n}}{BU_TOT_{t-n}} \times \frac{1}{n}$$
Methodology Short
Definition formula
Temporal Coverage
1975-1980, 1980-1990, 1990-2000, 2000-2010, 2010-2020, 2020-2030, 1975-2020, 1990-2020, 2000-2020
Uncertainties & Best practices
Values less than -5 are indicated as '< -5' and values greater than 5 are indicated as '>5' in the dataset.

Indicator thematic area
SDG
Indicator group
Land Use Efficiency
Attribute ID
SD_LUE_PGR_XXXX_YYYY
Indicator Name
Population Growth Rate
Units
Dimensionless
Data Source
Melchiorri, M.; Pesaresi, M.; Florczyk, A.J.; Corbane, C.; Kemper, T. Principles and Applications of the Global Human Settlement Layer as Baseline for the Land Use Efficiency Indicator—SDG 11.3.1. ISPRS Int. J. Geo-Inf. 2019, 8, 96. https://doi.org/10.3390/ijgi8020096 SDG indicator metadata (Harmonized metadata template - format version 1.1), Metadata-11-03-01.pdf (un.org)
Indicator description
Population Growth Rate is defined as logarithm of the fraction between of the total population in the current year and the total population in the past year, divided by the difference between the two years. The total population is calculated as total built-up in the urban center.
Methodology
$$LCR = \ln\left(\frac{POP_TOT_t}{POP_TOT_{t-n}}\right) \times \frac{1}{n}$$
Methodology Short
Definition formula
Temporal Coverage
1975-1980, 1980-1990, 1990-2000, 2000-2010, 2010-2020, 2020-2030, 1975-2020, 1990-2020, 2000-2020
Uncertainties & Best practices
Values less than -5 are indicated as '< -5' and values greater than 5 are indicated as '>5' in the dataset.

Indicator thematic area
SDG
Indicator group
Open Green Space
Attribute ID
SD_POP_HGR_XXXX
Indicator Name
Share of the Urban Centre population living in area of high greenness
Units
%
Data Source
United Nations Human Settlement Programme (UN-Habitat), Global Urban Indicators Database 2024 USGS Earth Resources Observation and Science (EROS) Center. (2021). Landsat 8 Level-2 Science Products. Landsat NDVI data from Landsat 8 mission. Retrieved from https://eros.usgs.gov/land-cover-land-use/landsat-8-level-2-science-products USGS Earth Resources Observation and Science (EROS) Center. (2021). Landsat 8 Level-2 Science Products. Landsat NDVI data from Landsat 8 mission. Retrieved from https://eros.usgs.gov/land-cover-land-use/landsat-8-level-2-science-products Schiavina M., Freire S., Carioli A., MacManus K. (2023): GHS-POP R2023A - GHS population grid multitemporal (1975-2030). European Commission, Joint Research Centre (JRC) PID: http://data.europa.eu/89h/2ff68a52-5b5b-4a22-8f40-c41da8332cfe, doi:10.2905/2FF68A52-5B5B-4A22-8F40-C41DA8332CFE Pesaresi M., Politis P. (2023): GHS-BUILT-S R2023A - GHS built-up surface grid, derived from Sentinel2 composite and Landsat, multitemporal (1975-2030). European Commission, Joint Research Centre (JRC) PID: http://data.europa.eu/89h/9f06f36f-4b11-47ec-abb0-4f8b7b1d72ea, doi:10.2905/9F06F36F-4B11-47EC-ABB0-4F8B7B1D72EA
Indicator description (xxx max words)
Share of the Urban Centre population living in area of high greenness for the corresponding year
Methodology
Sequence of masking and zonal statistics. 300m buffering of the built-up domain, masking of the built-up and population grid with 3 years average NDVI (greater equal than threshold); zonal statistics of the population in the obtained mask; ratio between zonal statistics population and urban centre population. Thresholds for high greenness are estimated by UN-Habitat for agro-ecological-zones, from a sample of 700 cities. Agro-ecological zone values are obtained by averaging observations within the cities in each zone.
Methodology Short
Zonal Statistics (sum), ratio
Temporal Coverage
1985, 1990, 1995, 2000, 2005, 2010, 2015, 2020, 2025
Uncertainties & Best practices
The results may differ from V1.0, while the methodology has not change, the indicator has been recalculated fixing a bug in the algorithm.