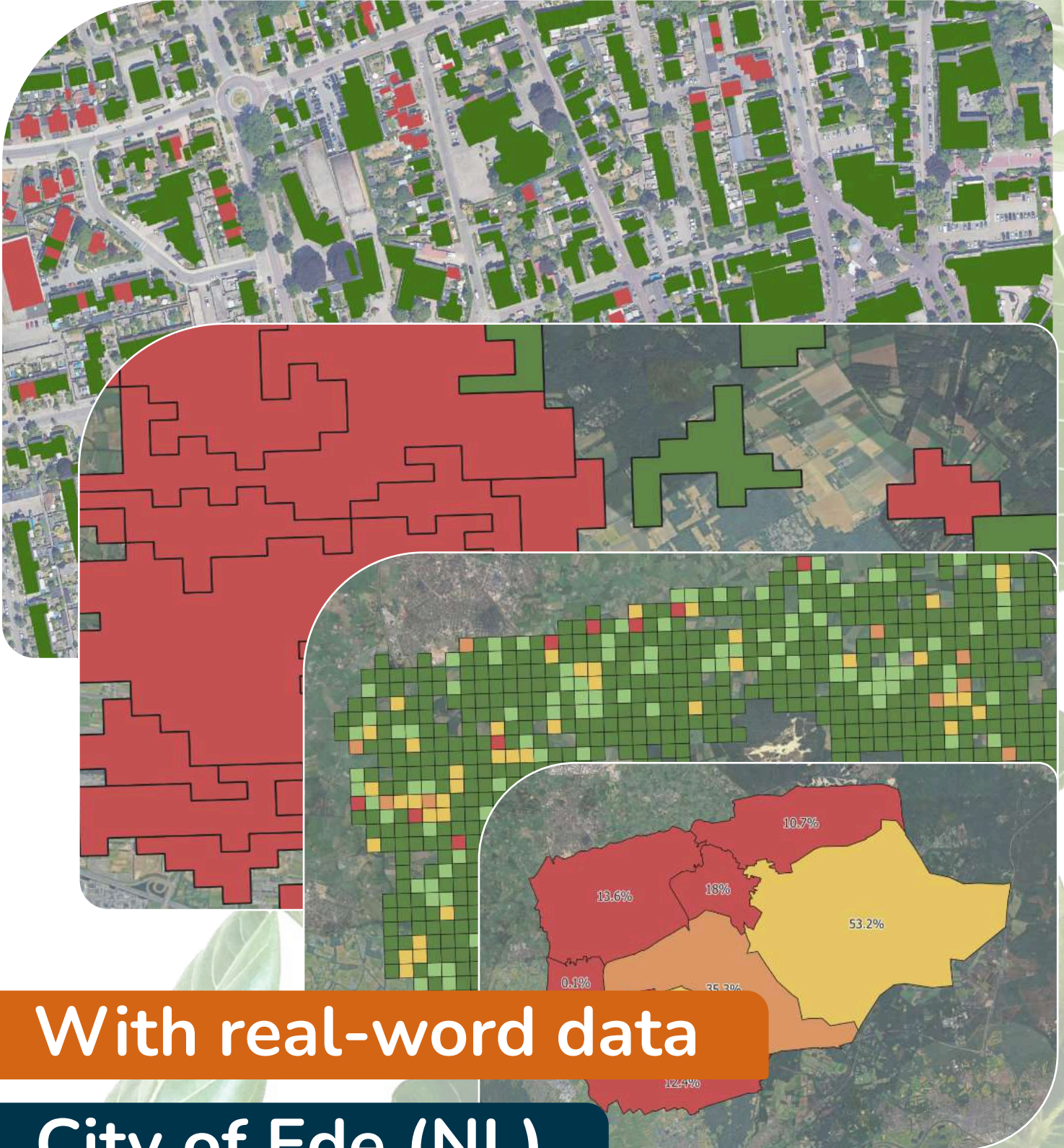


A green revolution: The 3-30-300 rule



How green is your city?

The 3+30+300 Rule Assessment



3

Trees

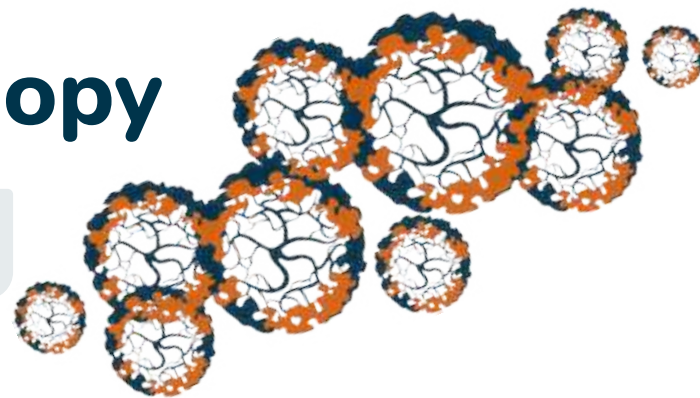
A simple, yet powerful rule to make your city healthier and greener!

You should see at least 3 large trees from home, school, or work.

30

30% tree canopy

Your neighborhood should have at least 30% tree canopy.



300

300m from a green space



Everyone should live within 300m of a green space.



Why should you care?

Over 4% of summer deaths in European cities are caused by extreme heat.

more trees = cooler streets

Increasing tree cover to 30% can lower temperatures by 1.3°C and prevent 1 in 3 heat-related deaths.

Why is the 3+30+300 rule important?

As cities grow, so does the need for innovative ways to address urban challenges like air quality, extreme heat, and access to green spaces. Nature-based solutions, such as the 3+30+300 framework, offer a promising approach by using natural systems—like parks, forests, and waterways—to benefit urban populations and ecosystems.

“

The 3-30-300 rule provides a tangible framework for integrating greenery into urban environments. By ensuring residents can see trees, have adequate canopy coverage, and live within a short distance of green spaces, we create urban landscapes that support mental well-being, reduce heat, and enhance overall resilience. This approach not only beautifies our cities but strengthens their capacity to withstand climate impacts, offering a pathway to more sustainable, livable communities.



Miloslav Kaláb
Climate Resilience Specialist



Significant health benefits

Living within 300 meters of a good park helps people stay active, connect with others, and refresh their mind.



Increase in biodiversity

By following the 3+30+300 rule cities increase their biodiversity and improve their microclimates, while diminishing heat islands.



Less stress

The presence of trees brings daily contact with nature, which has a positive impact on mental health, increases a sense of calm and restful sleep, while reducing stress.



Safety first

Canopy coverage of at least 30% can decrease a third of heat-related premature deaths in summer.

Big trees are the key

Mature trees regulate water flow

Mature trees play a crucial role in regulating water flow and enhancing water quality. Their root systems help slow down stormwater runoff, reducing the risk of erosion and flooding. At the same time, they act as natural filters, capturing impurities and excess nutrients, which contributes to the cleanliness of water bodies and underground reserves.

Tree-powered energy efficiency

Strategically placed trees around buildings can significantly reduce energy consumption. By providing shade in the summer, they lower air conditioning demand by up to 30%. In colder months, they act as windbreaks, cutting heating energy needs by 20–50%.

Cleaner Air, Less CO₂

Urban trees play a crucial role in improving air quality and combating climate change. A single tree can absorb up to 150 kg of CO₂ annually, helping to reduce greenhouse gases and mitigate global warming. At the same time, large trees act as natural air filters, trapping urban pollutants and fine particulates, creating cleaner and healthier city environments for everyone.

Cooling power

Urban trees help combat extreme heat by reducing temperatures through shading and transpiration. Their canopies block solar radiation, while moisture released from leaves cools the air, lowering pedestrian-level temperatures by up to 12°C.

A study of 110 cities across 17 climate zones found that in 83% of cases, trees kept peak monthly temperatures below 26°C. However, effectiveness depends on climate, tree species, and urban design. Deciduous and evergreen mixes work best in open spaces, while evergreens thrive in compact urban areas.

To maximize cooling, strategic tree placement is essential. Well-planned urban forestry can mitigate heat islands, reduce energy use, and create more livable cities.



Showcasing the results:

The 3+30+300 assessment of Ede, Netherlands

Greenery segmentation

The 3-30-300 segmentation of public green spaces relies on the analysis of **4-band orthophoto** imagery, which includes **RGB channels** and **near-infrared (NIR)**.



What is NIR?

NIR plays a crucial role in identifying vegetation, as it is strongly reflected by healthy plant tissue due to the internal structure of leaves. Active vegetation absorbs CO₂, and during photosynthesis, visible light (especially red and blue) is absorbed by chlorophyll, while NIR is mostly reflected due to the spongy mesophyll. The amount of NIR reflected correlates with leaf structure and water content rather than direct photosynthetic activity. In contrast, dry leaves and non-living materials tend to have lower NIR reflectance, making this spectral band essential for vegetation classification.

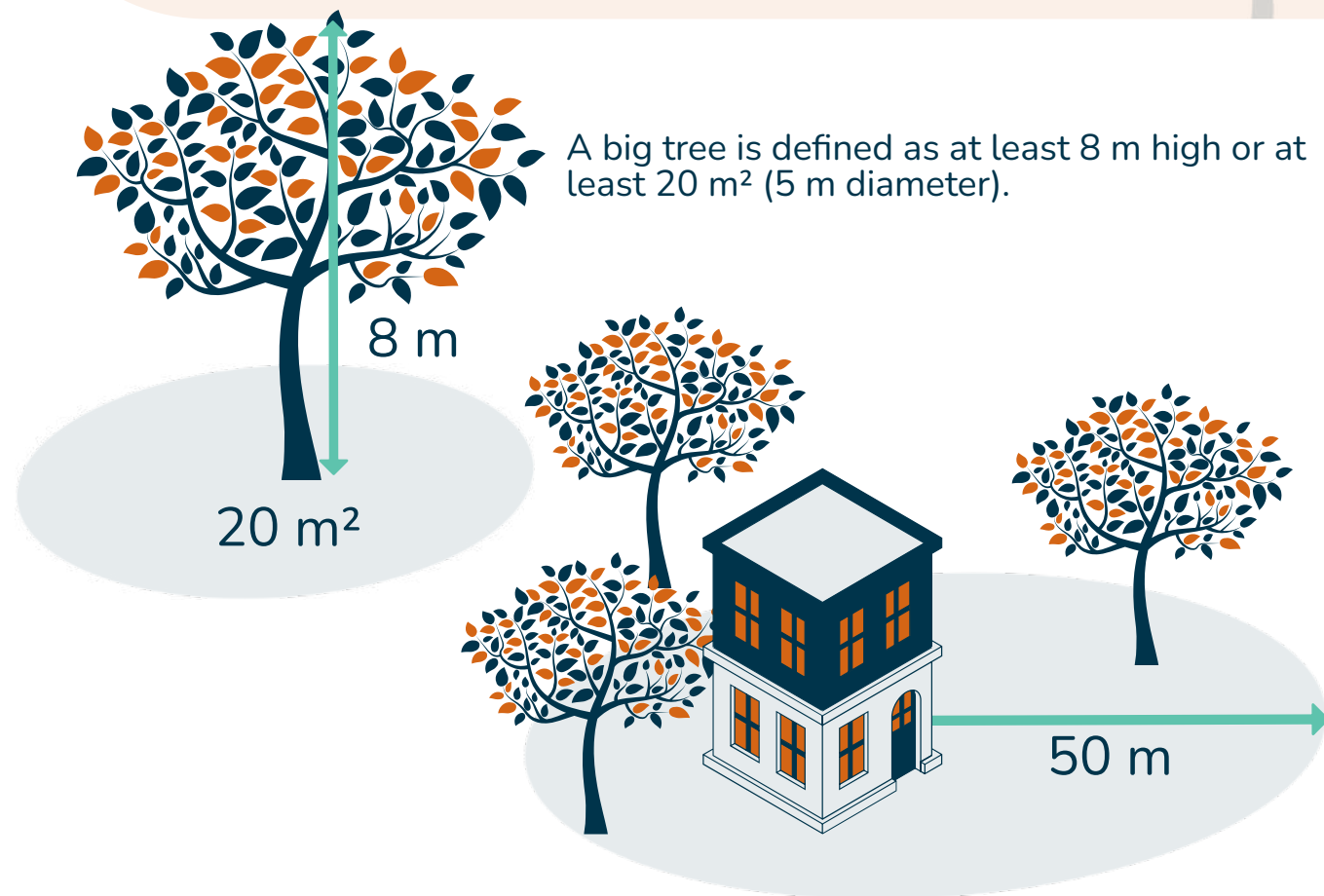
To segment vegetation, spatial classification analysis is applied to the combined NIR and RGB data. This process automatically delineates the boundaries of individual vegetation objects, resulting in circular segments corresponding to trees.



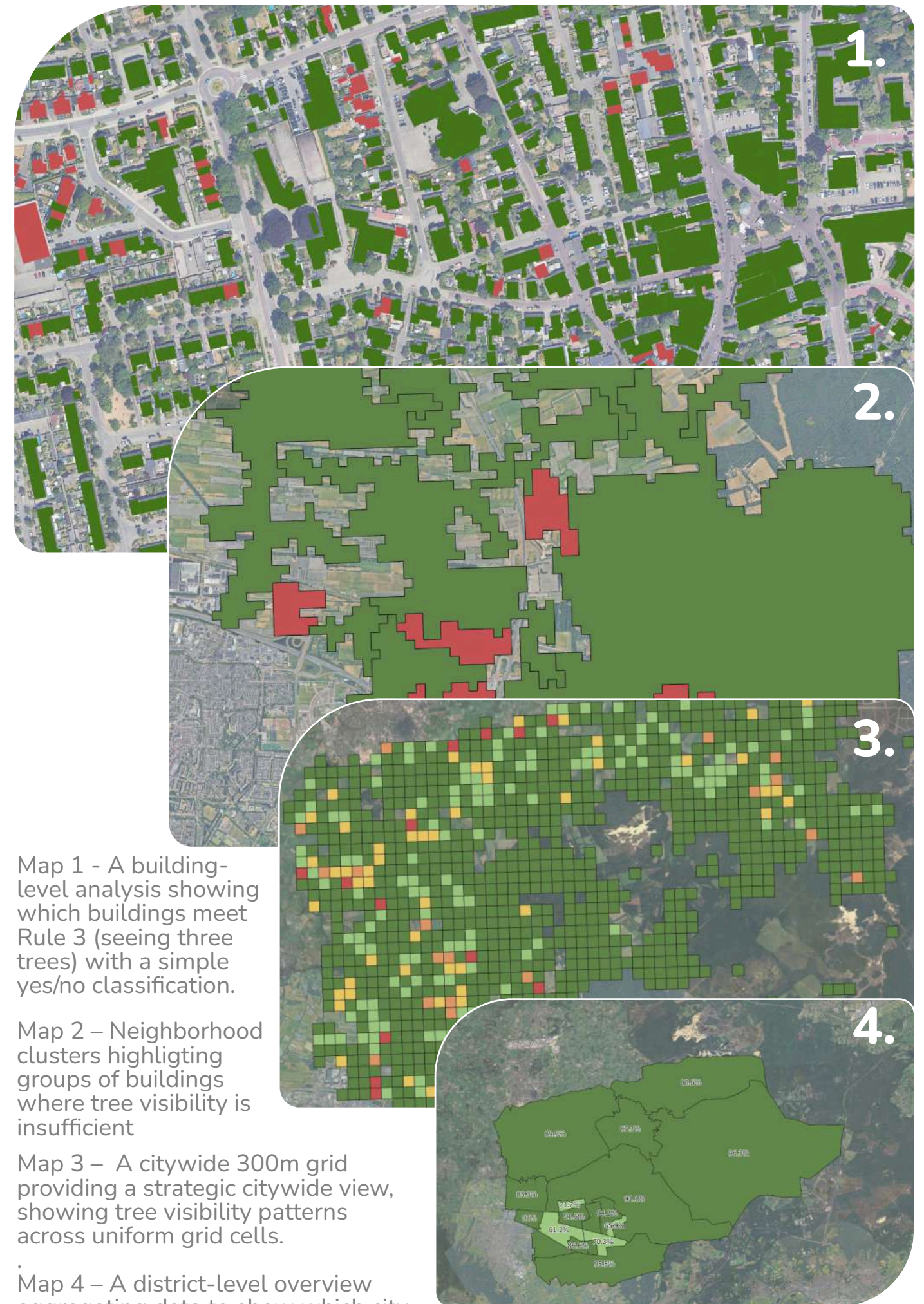
Can you see three trees?

Rule 3

Every citizen should be able to see at least three sizable trees from their home, as proximity to visible greenery significantly benefits mental health and well-being. Having trees nearby reduces stress, enhances creativity, and provides much-needed breaks from daily routines. The COVID-19 pandemic further highlighted the importance of accessible green spaces, as people were often confined to their homes and immediate surroundings. Seeing trees from our windows helps us stay connected to nature's rhythms, offering a sense of calm and inspiration.



The rule is calculated for each building by determining the number of trees within a 50-meter radius, taking into account any obstacles that may block the view.



Map 1 - A building-level analysis showing which buildings meet Rule 3 (seeing three trees) with a simple yes/no classification.

Map 2 - Neighborhood clusters highlighting groups of buildings where tree visibility is insufficient

Map 3 - A citywide 300m grid providing a strategic citywide view, showing tree visibility patterns across uniform grid cells.

Map 4 - A district-level overview aggregating data to show which city districts meet Rule 3

Is there enough canopy coverage?

Rule 30

A 30% tree canopy cover in every neighborhood is essential for cooling cities, improving air quality, and enhancing well-being. Research shows this threshold significantly benefits mental and physical health while fostering stronger, more active communities.

Leading cities like Barcelona, Bristol, and Vancouver have set 30% canopy targets, recognizing its impact on urban livability. Where trees struggle to grow, green infrastructure and vegetation can help meet this goal.



In general, it is very problematic, almost impossible, to fulfill this rule in densely built-up areas. The goal is to get to 30% as closely as possible.



A neighborhood is defined as the 300-meter area surrounding each building. For this rule, a tree is considered any canopy taller than 5 meters, regardless of its size.

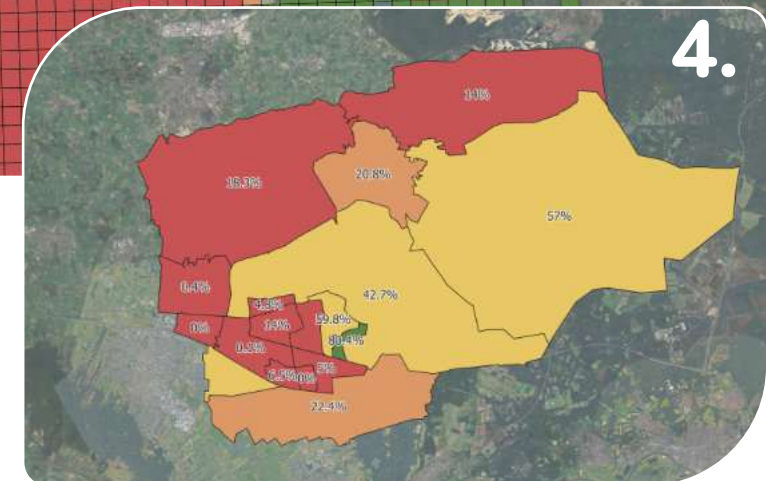


Map 1 - A building-level tree canopy coverage showing which buildings are surrounded by at least 30% tree canopy, using a yes/no classification

Map 2 - Neighborhood clusters buildings therefore highlighting areas where tree canopy falls below 30%

Map 3 - A citywide 300m grid dividing the city into uniform grid cells, showing the percentage of tree canopy per 300m² area

Map 4 - A district-level overview aggregating canopy data at the district level



Is there a park in walking distance?

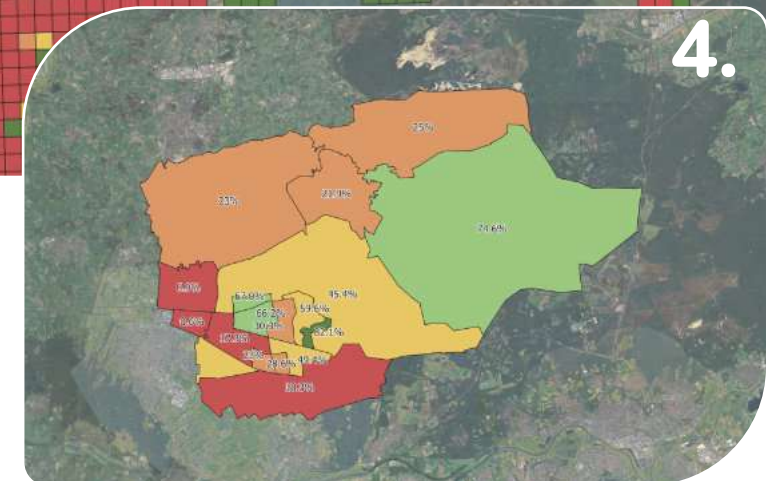
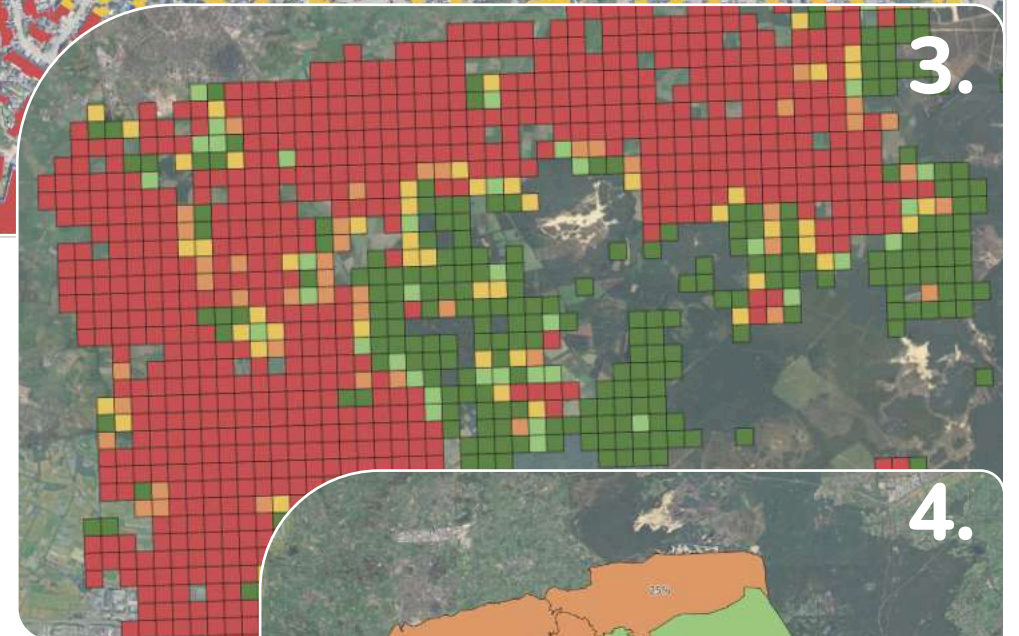
Rule 300

Proximity to green space is essential for physical and mental well-being. The World Health Organization recommends that everyone should live within 300 meters of a park or green space of at least 1 hectare, ensuring recreation is just a 5–10 minute walk away.

Urban planning should adapt to local contexts, whether in dense cities or suburban areas, by integrating linear green spaces, green corridors, and multi-use parks. When larger parks aren't possible, spaces as small as 0.5 hectares can still provide essential benefits.



We verify whether each building has accessible green space within a 300-meter walking distance. These green spaces must be at least 0.5 hectares in size and have a minimum width of 20 meters to exclude long, narrow alleys.



Map 1 - Building-level green space access shows which buildings are within 300m of a green space, using a clear yes/no classification.

Map 2 - Neighborhood Clusters: Groups buildings into distance categories (0-300m, 300-600m, 600-9000)

Map 3 - Citywide 300m grid dividing the city into uniform grid cells, showing the percentage of buildings with green space access per cell

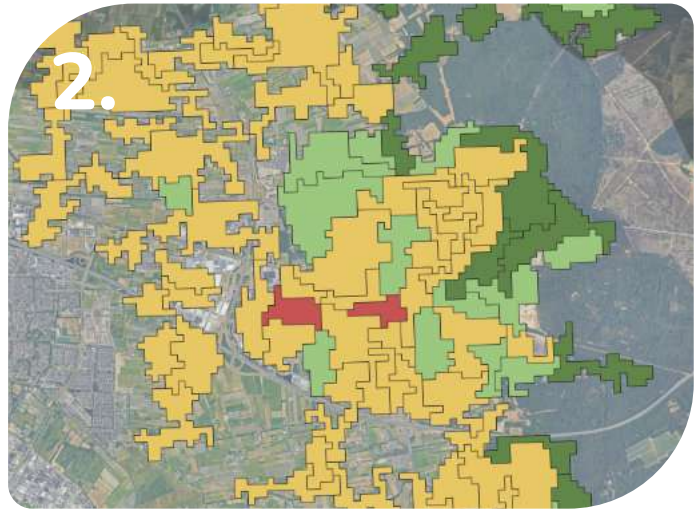
Map 4 - A district-level overview aggregating accessibility data at the district level

Overall assessment

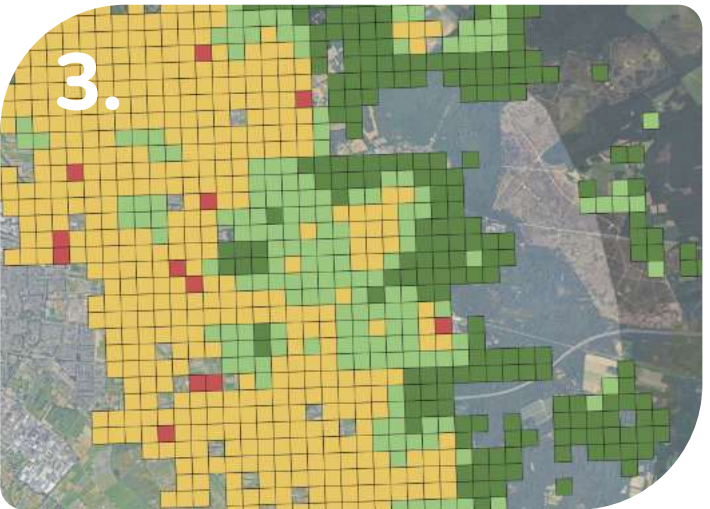
Rule 3+30+300



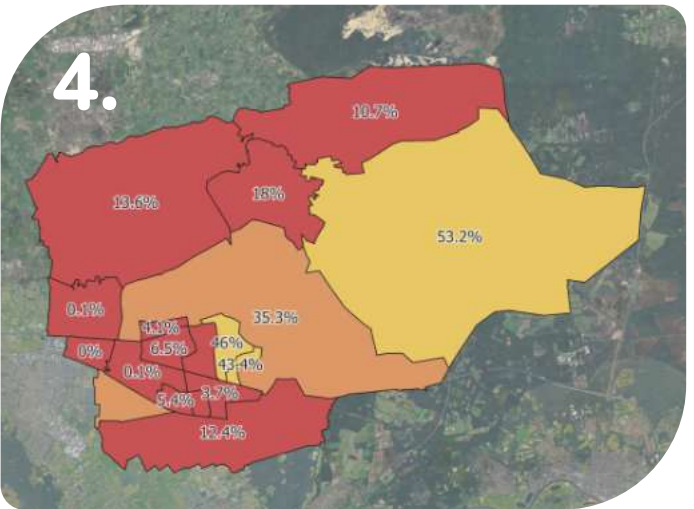
Map 1: A synthesis map categorizing each building into one of four groups (0 rules met, 1 met, 2 met, 3 met).



Map 2 – Synthesis map (clustering) layer categorizing polygons based on rule fulfillment: 0 rules met, 1 met, 2 met, or 3 met.



Map 3 – 300 x 300 m grid layer containing percentage of houses served by 3-30-300 rules 4 categories: 0 rules met, 1 met, 2 met, 3 met.

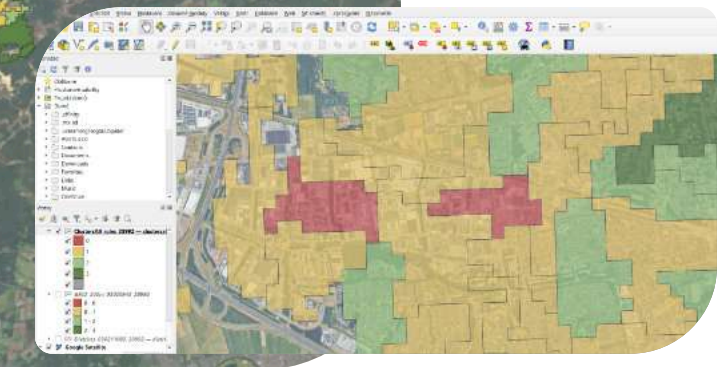
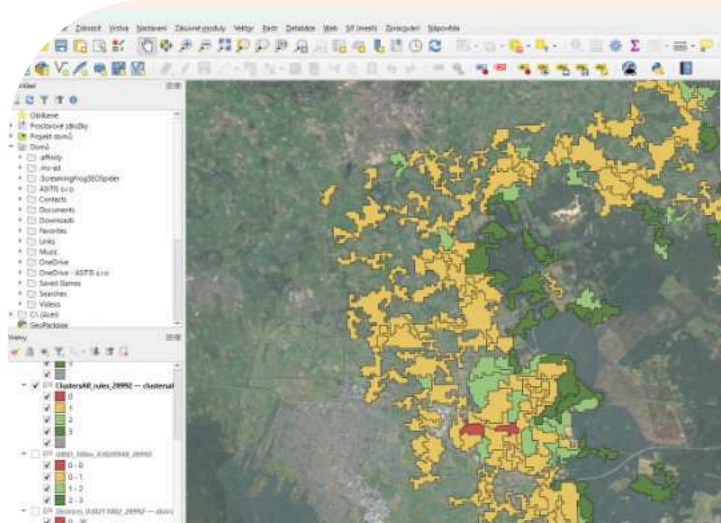


Map 4 – Synthesis map by district, with each assigned a percentage value.

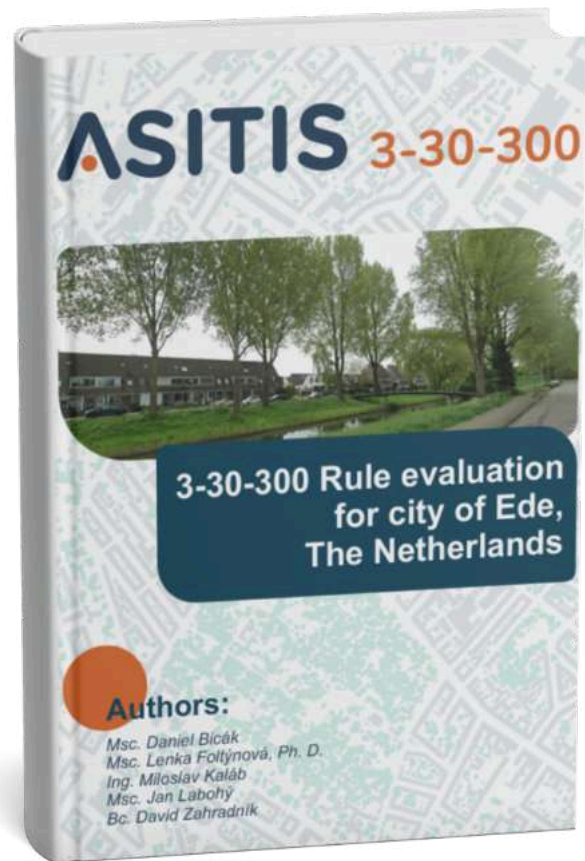
Everything you need for your urban green strategy

3+30+300 outputs

Your own **shapefiles**



A comprehensive **report**



Attractive **infographics**



**We are ready
to help!**



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