

Annexes

Annex 1: Definitions of concepts

Participatory design (*cooperative design, co-design, co-creation, co-production*)

Participatory design is an umbrella term to describe different approaches to actively engaging all stakeholders (e.g., employees, partners, customers, citizens, end users) in the design process. It focuses on the processes and procedures of design to ensure that the outcomes meet the needs and functional requirements of the users. It can include co-design – i.e., where citizens are involved in the co-creation of design or strategic proposals, even helping to build the proposal.

Source: Pelsmakers, S., Hoggard, A., Kozminska, U., & Donovan, E. (2022). *Designing for the Climate Emergency*. Taylor & Francis. <https://bookshelf.vitalsource.com/books/9781000600766>

Collaborative governance

Collaborative governance refers to the act of taking responsibility for each action within the co-creation process. The way the co-creation process is collaboratively governed. In the case of Urban Biodiversity, there is not as much research and/or case studies that combine both concepts.

Source: Mahmoud, I. H. (forthcoming 2024). Collaborative governance and planning for urban biodiversity Nexus: An explorative study. Lecture Notes of Networks and Systems (LNNS). Networks, Markets & People: Communities, Institutions and Enterprises towards post-humanism epistemologies and AI challenges, Volume 3- Published by Springer Nature -NMP2024, 22-24 May 2024 | Accepted for publication forthcoming 2024. <https://www.springer.com/series/15179>

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<https://ajuntament.barcelona.cat/ecologiaurbana/en/what-we-do-and-why/green-city-and-biodiversity/nature-plan>

City of Lahti. (2013). *Lahden viheralueohjelma 2013-2025*. <https://www.lahti.fi/asuminen-jaymparisto/kaupunkiympariston-suunnittelu/>

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Comune di Torino. (2020). *PIANO STRATEGICO DELL'INFRASTRUTTURA VERDE*. www.comune.torino.it/verdepubblico

Annex 2: Research Question 1

Table 1: Cities selection from databases – Research Question 1

Selected Database	Shortlisted Cities / FUA from the databases
Selected cities so far based on benchmarking, snowballing, data availability and previous studies focusing on cities with min 100K inhabitants	Barcelona, Torino, Ghent, Strasbourg (or Nantes), Utrecht, Hamburg, Lisbon, Lahti, Porto, Aarhus, Wroclaw, Thessaloniki,
Snowballing from Experts	Barcelona, Torino, Ghent, Strasbourg, Utrecht, Hamburg, Paris
Previous European funded projects Frontrunners Urban Green Up or UGUPlus (now UNP+) https://networknature.eu/new-project-ugpplus-supports-cities-imagining-more-sustainable-and-inclusive-future	Paris, Barcelona , Belgrade, Mannheim, and Burgas
Urban Biodiversity Hub filter on Europe https://www.ubhub.org/map	Hamburg, Utrecht , Malmö
Urban Governance Atlas Interlace Hub https://interlace-hub.com/urban-governance-atlas?combine=&combine_1=&combine_2=&field_iga_regi_on_value_i18n=0&field_relevance_specific_peri_2_value_i18n=All&term_node_tid_depth%5B%5D=2648	Oslo, Amsterdam, London, Glasgow, Barcelona, Copenhagen, Lisbon,
Top ranking Cities in Local Climate Action Plans research by Reckien et al 2023/ Salvia M. et al 2023	18 cities (Amsterdam, Barcelona , Bologna, Bristol, Brussels, Dublin, Glasgow, Helsinki, Krakow , Lyon, Madrid, Malmö , Milan, Nantes , Paris, Torino , Toulouse, Valencia)
Green Capital Award- last ten years 2013-2023	Copenhagen , Bristol, Hamburg , Grenoble, Nijmegen, Ljubljana, Lahti , Lisbon , Essen, Nantes
Climate Neutral Cities Mission first 10 cities in 2023	Sønderborg (Denmark), Mannheim (Germany), Madrid , Valencia, Valladolid, Vitoria-Gasteiz and Zaragoza (Spain), Klagenfurt (Austria), Cluj-Napoca (Romania) and Stockholm (Sweden).
Climate Neutral Cities Mission 23 cities in 2024	Ioannina , Kalamata, Kozani, Thessaloniki (Greece), Heidelberg (Germany), Leuven (Belgium), Espoo, Lahti , Lappeenranta, Tampere, Turku (Finland), Barcelona , Seville (Spain), Pecs (Hungary), Malmö (Sweden), Guimaraes, Lisbon (Portugal), Florence, Parma (Italy), Marseille, Lyon (France), Limassol (Cyprus) and Izmir (Türkiye).
Green City Accord https://environment.ec.europa.eu/topics/urban-environment/green-city-accord_en https://environment.ec.europa.eu/topics/urban-environment/green-city-accord/five-priority-areas_en#nature-biodiversity	Linz Burgas Stara Zagora Varna Aarhus Tallinn Espoo Helsinki Hämeenlinna Lappeenranta Lahti Tampere Turku Vantaa Angers-Loire Metropole Bordeaux Metropole

Cannes
Grenoble
Grenoble Alpes Métropole
Lille
Lille Metropole
Lyon
Lyon Métropole
Marseille
Pau
Dresden
Munich
Münster
Agiioi Anargyroi-Kamatero
Argostoli
Fyli
Kozani
Nikaia-Rentis
Miskolc
Acquaviva delle Fonti
Arezzo
Bolzano/Bozen
Cesena
Florence
Genoa
Taranto
Treviso
Latvia
Riga
Lithuania
Vilnius
Valletta
Utrecht
Oslo
Poland
Gdynia
Krakow
Opole
Albergaria-a-Velha
Alvito
Amadora
Águeda
Barreiro
Braga
Cascais
Coruche
Esposense
Évora
Guimarães
Lagos
Lobos
Loulé
Matosinhos
Oeiras
Oliveira do Bairro
Penafiel
Ponta Degada
Porto
Porto Moniz
Póvoa de Varzim
Seixal
Sintra
Torres Vedras
Valongo

	Vila Nova de Poiares Vila dei Rei Viseu Alba Iulia Bistrița Brasov Cluj-Napoca Galati Roman Tulcea Košice A Coruña Albacete Alicante Avila Barakaldo Cieza Ciudad Real Huelva Las Rozas de Madrid Logroño Madrid Malaga Murcia Seville Soria Tortosa Valencia Valladolid Vitoria-Gasteiz Zaragoza Gothenburg Helsingborg Malmö
Overlapping Cities with the 100 missions	Aarhus Lahti Turin Thessaloniki Lisbon Barcelona Utrecht Milan
BE	Ghent
DE	Hamburg
DK	Arhus
ES	Barcelona
FI	Lahti
FR	Nantes
HR	Rijeka
IT	Torino
MT	Greater Valletta
NL	Utrecht
PL	Wroclaw
PT	Porto
BG	Burgas
SE	Malmö
GR	Thessaloniki

Table 2: Data of the 10 selected cities from the 48 cities sample – collected by the authors.

#	City	Country	Year	Name of the plan	Data Link
1	Barcelona	ES	2021	Barcelona Nature Plan 2021-2030	https://ajuntament.barcelona.cat/ecologiaurbana/en/what-we-do-and-why/green-city-and-biodiversity/nature-plan https://ajuntament.barcelona.cat/ecologiaurbana/en/barcelona-biodiversity-atlas https://ajuntament.barcelona.cat/atlesbiodiversitat/en/ https://interlace-hub.com/trees-life-barcelona-tree-master-plan-2017-2037
2	Torino	IT	2020	PIANO STRATEGICO DELL'INFRASTRUTTURA VERDE	http://www.comune.torino.it/verdepubblico/il-verde-a-torino/piano-infrastruttura-verde/ https://www.torinovivibile.it/ https://www.torinocambia.it/
3	Ghent	BE	2020	2020-2025 Climate Plan	https://stad.gent/en/city-governance-organisation/city-policy/ghents-climate-actions/urban-green
4	Hamburg	DE	2014 2013-2020 2022	Green roof strategy Hamburg Hamburg – European Green Capital: 5 Years On Fostering Urban Biodiversity Through Local Actions Natürlich Hamburg!	https://una.city/nbs/hamburg/green-network-hamburg https://www.hamburg.de/contentblob/6386544/91e59cfe5ead7ab55b1ff587f65b7ba2/data/brochure.pdf https://www.hamburg.de/gruendach-hamburg/4364586/gruendachstrategie-hamburg/ https://www.hamburg.de/hamburg-ist-gruen/ https://www.hamburg.de/contentblob/16535776/976ebd8cea9ec3421113f7f1305593dd/data/d-zusammenfassung-gesamt-pflege-und-entwicklungsplan.pdf
5	Utrecht	NL	2014 2018-2023	Green Structure Plan 2017-2030 Spatial Strategy Utrecht 2040	https://environment.ec.europa.eu/news/green-city-accord-focus-utrecht-2022-12-20_en https://oppla.eu/casestudy/19311#:~:text=Green%20Structure%20Plan%20actions%20aim,sustainable%20growth%20are%20core%20values. https://interlace-hub.com/neighbourhood-green-plan-utrecht https://healthyurbanliving.utrecht.nl/our-vision-for-utrecht-in-2040/ https://m2050.media/en/utrecht-a-city-that-leads-the-way-in-sustainable-mobility-by-bicycle/
6	Porto	PT	2023 2022 2019-2020	Porto talks climate Porto Sustainable City Environment quick guide 2020	https://eurocities.eu/stories/porto-talks-climate/ https://investporto.pt/en/why-porto/sustainable-city/ https://eurocities.eu/stories/my-future-city-2030/ https://ambiente.cm-porto.pt/files/uploads/cms/ambiente/44/files/1613665758-bw3S7s1xgc.pdf
7	Lahti	FI	2021 2023 2021-2025	Green Capital Award 2030 Climate Neutrality Action Plan Planning of green areas Program	https://greenlahti.fi/wp-content/uploads/2022/03/Lahti_EGC2021_Final_Report.pdf https://storymaps.arcgis.com/stories/cddae402fbbe4653abe4c08856515c1d https://netzerocities.app/_content/files/knowledge/4187/lahti_nzc_ccc_ok.pdf https://www.lahti.fi/asuminen-javymparisto/kaupunkiympariston-suunnittelu/
8	Aarhus	Dk	2021-2024 2024-2030	GREEN TRANSITION IN AARHUS Climate Action Plan 2021-2024 Greener Aarhus Climate-neutral Aarhus 2030 CLIMATE STRATEGY AGREEMENT: 2025-2030	https://aarhus.dk/media/twoe5i23/climate-action-plan.pdf https://aarhus.dk/media/kzzcdwng/climate-neutral-aarhus-2030.pdf https://aarhus.dk/media/asflj3ib/a_greener_aarhus.pdf https://una.city/nbs/arhus/afforestation-city-aarhus
9	Wrocław	PL	2019 2021 2022	Climate Adaptation Plan GrowGreen Participation project NBS PLAN Nature-based solutions in Wrocław	https://growgreenproject.eu/wp-content/uploads/2021/04/GrowGreen_participation_Wroclaw.pdf https://networknature.eu/casestudy/28829 https://eu-mayors.ec.europa.eu/sites/default/files/2022-10/eumayors-case%20study-wroclaw-en.pdf
10	Thessaloniki	GR	2017 2018 2024	Resilient Thessaloniki A Strategy for 2030 Increasing urban green in Thessaloniki Promoting Green Technology in Thessaloniki, Greece	https://resilientcitiesnetwork.org/downloadable_resources/Network/Thessaloniki-Resilience-Strategy-English.pdf https://www.gwp.org/en/NCWR/news/News-and-Events/a_green_wall_in_thessaloniki/ https://futurehubs.eu/thessalonikigreece-the-story-of-urban-renewal-and-community-transformation/

Annex 3: Analysis and Results Elaboration (Research Question 3)

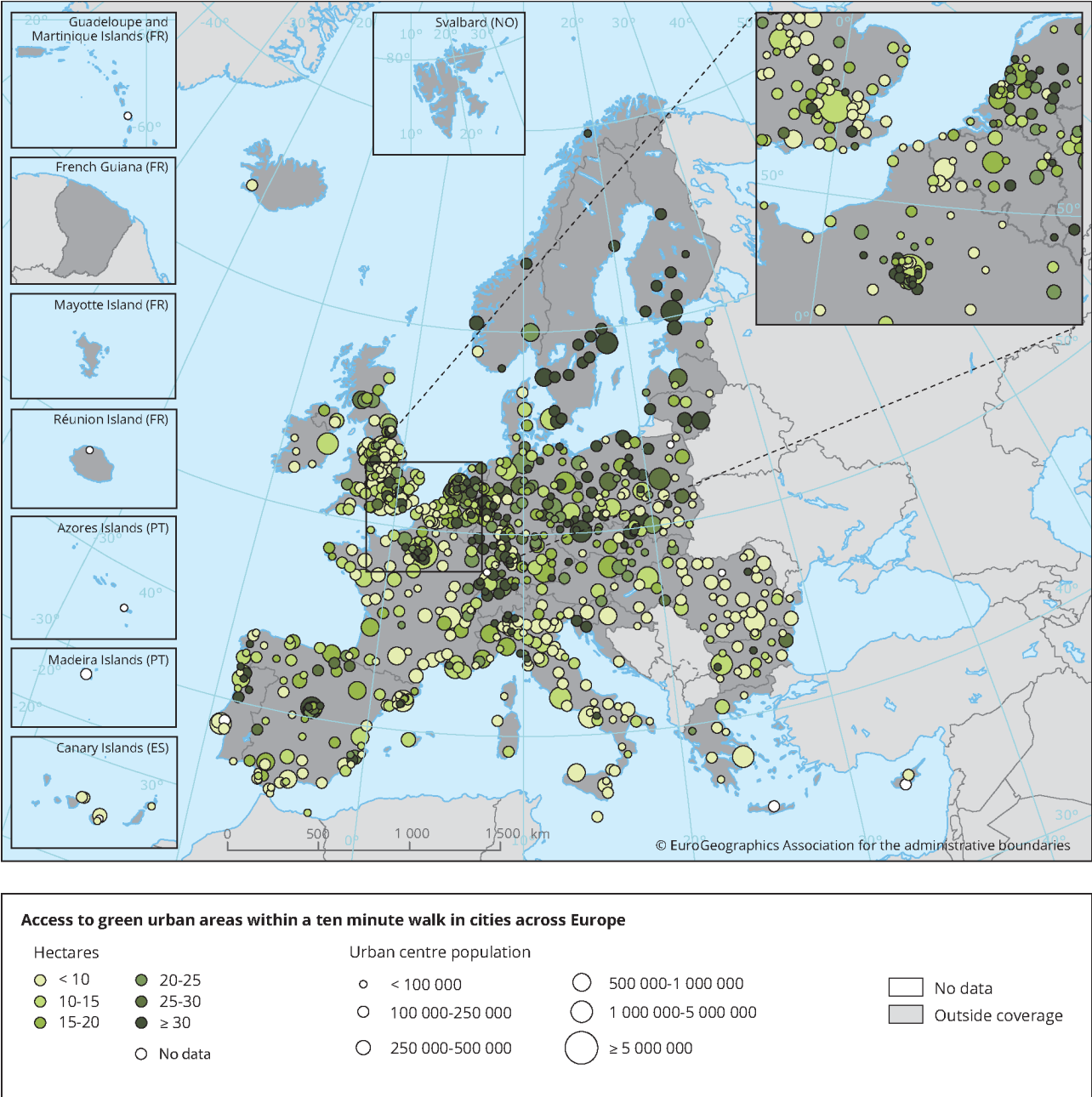


Figure 0: Accessibility to green urban areas in 10 minutes across Europe. Source: research done by EEA, 2020 https://www.eea.europa.eu/data-and-maps/figures/access-to-green-urban-areas/107334_map3-1-map-access-to-eps

Table 3: Overall score of all categories in all 10 cities. Source: the authors.

Macro Categories		Barcelona	Turin	Utrecht	Hamburg	Ghent	Aarhus	Lahti	Porto	Wroclaw	Thessaloniki
	Criteria of Analysis	Urban Nature Pan 2030	<i>Piano Strategico Dell'infrastruttura Verde</i>	Vision Green structure Utrecht 2030	Natürlich Hamburg!	2020-2025 Climate Plan	A Greener Aarhus	green area program 2013–2025	Environment quick guide 2020	Climate Change Adaptation Plan 2030	Resilient Thessaloniki strategy for 2030
Urban Biodiversity Goals, targets and Actions	Established officially recognized and endorsed Urban Nature Plan (some plans are called green Infrastructure and Biodiversity)	4	3	1	4	2	4	3	1	2	2
	Relationship to Multilateral environmental agreements in Europe or explicit (or implicit) reference CBD targets 12 and 14 (if any) in GBDF*	3	2	3	4	2	4	3	3	3	2
	Embeddedness of urban biodiversity (understanding of the concept, cross connections with several visions, explicit integration of urban biodiversity concerns and objectives in plan, and having a list of actions and/or objectives)	4	3	0	3	3	4	3	4	1	1
	Challenges addressed in the plan (ecological, social, soil health, water management, green space management, heat stress, social equity, connection to environmental education)	3	3	3	2	3	3	2	3	4	3
	Targeted areas such as urban and (peri)-urban areas: parks, semi natural areas, allotments, community gardens, urban green spaces connected to grey infrastructure)	3	4	1	4	4	4	3	1	4	4
	Includes a strategic plan with an overarching vision, and an operational part (financial and investment plan, actions, timelines, indicators), as well as a clear and specific budget with sources for the requisite funding identified. The delivery plan ideally should cover a period of 3-10 years. Longer term vision coupled with actions and milestones.	4	4	1	4	4	2	2	2	4	4
	Realistic timetable for implementation (Established short term actions within the plan)	4	4	1	4	2	0	3	0	0	3
	The Plan Includes actions related to improving Accessibility to urban green and blue areas (% of population that can reach within 10-15 min walking distance green or blue urban areas)	2	0	1	3	2	3	2	2	0	1
Urban Governance and commitment to implementation	Initiating Body Typology (types of actors involved and type of policy instrument and if envisaged ay collaborative governance and citizen engagement actions)	3	1	3	3	2	3	4	1	3	2
	Stakeholders and local actors’ involvement (An increased coordination and cooperation between the interested stakeholders in order to improve the effectiveness of UB interventions)	4	2	3	1	3	3	3	1	1	2
	Governance models related working structure (instruments and mechanisms through which stakeholders manage the process such as i.e. managerial and working structures, internal formal or informal norms, configuration of sections and departments to better address and institutionalize aspects related to Urban Greening Plans)	3	0	4	3	4	1	1	1	3	2
	Multi-Actor (a diversity of stakeholders shares the responsibilities and results)	4	2	3	3	4	4	4	1	1	3
	Good practice actions oriented (effective, sustainable, locally appropriate, potentially replicable/upscaled, inclusive)	3	3	3	2	2	3	1	3	1	4
Institutional support and Policy integration %	Multi-sectorial and multi-dimensional horizontal policy integration (across policy domains and sectors, as well as including, environmental, economic and social issues)	3	2	2	3	2	4	4	4	3	4
	Multi-level Vertical Policy integration (a transferable policy that works well across all administrative international/national/local governance levels)	4	1	2	2	3	4	3	4	2	4
	Interdepartmental consultation and intraorganizational collaboration with the relevant authorities (among different municipal departments and with private actors and citizens involvement towards breaking silos in governance)	4	4	2	2	4	2	3	2	2	3
	Political will The presence of and Secure long term political commitment	4	4	4	4	3	4	3	2	4	4
Public Participation and collaborative governance mechanisms #	A transparent and participatory co-creation approach. The Local Planning Authority should involve the relevant actors – citizens, academics, as well as representatives of civil society and economic actors including methods and timeline)	4	4	4	2	4	4	4	0	2	4
	Presence of actions (workshops, information sessions, etc.) linked to the involvement of the local community (voluntary groups, associations, committees, citizens, etc.) along part or all of the planning process (co-planning, co-design , co-implementation, co-monitoring of the plan / co-creation-co-production)	4	4	4	1	4	4	2	3	2	4
	Presence in the plan of education, communication and raising awareness actions (e.g. web portals, newsletters, raising awareness campaigns) of the local community on the benefits of urban biodiversity.	4	4	3	1	4	4	4	4	4	4
	Reference to shared governance tools/instruments (web portals, consultations, tables, framework agreements, collaboration agreements, etc.) for the implementation and monitoring of the actions envisaged by the plan.	4	4	4	1	2	4	3	3	3	2
	Reference to types of stakeholders involved in the process (PA, citizens, associations, businesses, etc.), phase of the participatory process in which they are involved, and level of representation of citizens.	3	4	2	2	3	4	2	2	2	1
Financing mechanisms	Integration of financial and investment plan in the temporal scope covered matching planned actions and targets (availability of financing proposed actions to be implemented, public and private funding, grants, philanthropy, pooling municipal budget)	2	3	2	4	0	0	4	0	3	2
	Sources of funding availability and diversity (public, corporate, NGOs funds, private, include presence of required financial expertise and capacity within municipal departments (or resources to commission them outside the departments)	1	2	2	4	0	1	4	0	2	4
	Integration of financial and investment plan (public and private funding, grants, philanthropy, pooling municipal budget) matching planned actions and targets	1	3	2	1	0	0	4	0	1	3
	Presence of blended finance and innovative incentive instruments (e.g. public-private(-people) partnerships, market-based instruments, etc.)	2	2	3	1	0	1	4	0	2	2
Monitoring and Evaluation	Existing Monitoring framework in place related to plan baseline advancement (yes with indicators/yes without indicators/no)	3	0	4	4	4	1	4	0	4	3
	Possible continuous evaluation of performance across actions, targets and indicators (Previous Evaluation report, tools, indicators established, mainly on the plan itself and possible improvements) even if partial like every 2 years.	3	2	3	4	3	0	4	2	4	2
	Achieved Outcomes and Impacts / results from 1-2 years (if the plan is there since 3 years at least)	4	1	3	3	2	2	3	1	3	1
	Success factors and lessons learned from plan development (self-assessment by the municipality)	4	0	4	0	0	0	4	0	0	3
Total		98	75	77	79	75	77	93	50	70	83

Table 4: Summary table for desk analysis of the 10 cities’ plans selected from the sample.

Macro Category	Barcelona	Turin	Utrecht	Hamburg	Ghent	Lahti	Aarhus	Wroclaw	Porto	Thessaloniki
Biodiversity goals, targets and actions	Focus on citizen share of urban greenery density by resident by neighbourhood rather than accessibility metrics.	Lack of specific goals on increasing biodiversity in city if not by safeguarding the number of natural areas within the municipal boundaries	No mention to urban biodiversity actions in the first version of the plan 2018-2030, yet some importance is given in the new spatial strategy 2040.	A detailed plan explicitly on Policy Activation Brief, Fostering Urban Biodiversity through Local Actions. Clearly stating reference to sustainable development goals and CBD targets.	First plan to have detailed nine specific NBS actions that aim to increase city resilience and greenery. Action 85 tackles the biodiversity sensitive design for changing climate and species.	A nature conservation programme is being drawn up and is due to be completed in 2022.		Wroclaw has tried to combat climate change for years. When the temperature exceeds 30 degrees, the temperature of a road or pavement can reach even 50 or more degrees. And green surfaces maintain the air temperature – the local cooling effect. Under the trees, the temperature can be 7–8 degrees lower, which gives thermal comfort. Therefore, we are increasing the number of green places in Wroclaw.’	Porto is also actively working to promote biodiversity and combat climate change through the use of nature-based solutions. As part of this effort, the city is doubling its green areas by planting native trees, increasing soil permeability, and incorporating sustainable solutions in urban regeneration and construction.	The city has a dense urban structure with limited open or green spaces. There is currently 2.6m2 of green space per resident, compared to the European average of 8-10m². The absence or fragmentation of green and open space creates a shortage of suitable leisure environments and intensifies the impact of natural phenomena such as high temperatures during the summer and intense rainfalls during the winter.
Urban Governance and Commitment to implementation	Four specific actions (16-29) targeted the area of shared and cross-cutting governance of the plan with the municipality and residents.		The City Council established a vision for 2030 that was then revised in 2023 for 2040.	Several projects and municipal initiatives are tackling the commitment to urban biodiversity.	The municipality inducted an advisory board for nature and environment that include all citizens, Municipal Spatial Planning Committee (GECORO), Municipal Housing Board, Advisory Board for North-South Cooperation and Youth Council.	A wide range of stakeholders were involved in the planning of biodiversity measures in 2021, and the planned measures will be incorporated into the Green City Accord programme and the Urban Greening Plan promoted by the EU.			Porto is committed to enhancing the biodiversity of its territory with a series of projects and initiatives to enlarge and improve naturalised areas. One of the most prominent of these is the "Native Urban Woodlands of Porto" project ("Florestas Urbanas Nativas do Porto" - FUN Porto), which project's main objective is to expand the city's green structure using indigenous species and to promote the connection between residents and the naturalised spaces essential to the city's sustainability.	De-centralize authority from Athens to stakeholders in Thessaloniki. The EU biodiversity strategy 2020 calls for coordination at all levels to promote efficient governance and management
Institutional support and Policy integration	The Barcelona Nature Plan 2021-2030 consists of a strategy for the next 10 years, divided up into three lines and two cross-cutting areas with a total of 20 actions and 100 projects, with the first Action Programme from 2021 to 2025 under which 10 priority or lead projects will be implemented.	The plan enacted initially in 2020 has full support from the municipal organs as well as the local municipal authorities, however not continually supported due to political changes.			Lack of integration between actions on multi-level policy tackling several collaborative governance levels.	Climate governance training was completed, and a peer review was conducted in 2021. The competent governing bodies are due to review the peer review report in 2022.		The action will also affect the implementation of obligations arising from Directive 2010/31/EU. According to the directive, within a few years all buildings, including public buildings, should be almost self-sufficient in terms of energy.	The municipality is currently working on two jointly funded projects (H2020 and LIFE) for nature-based solutions: the creation of a health corridor in the eastern part of the city and the improvement of the bioclimatic comfort of the pupils at a primary school.	SchoolGreens is a platform connecting the most creative and green schools with eco-friendly enterprises, helping them to design and pilot new models for climate friendly schools and communities together.
Public Participation and shared governance mechanisms			Particular attention is given to citizens and community groups engagement in the process through Co-planning or co-design of projects through neighbourhood green plans	A special focus on communicating with citizens using Digital techniques and interactive mapping technologies, such as Dipas and Hamburg’s green at a glance web portal.	Six interactive thematic workshops between 21 November and 10 December 2019. These meetings provided valuable input to the Climate Plan and served as a solid starting point for shaping the climate policy further with citizens and organisations.				Porto, laboratory-city (Axis 5). Porto wants to become a living laboratory at the service of a whole ecosystem of entrepreneurialism that enables the city to be “used” to create sustainable products that solve real problems and that result in an improvement in quality of life, striving for repeatability so that solutions for other cities can emerge from Porto's experience.	Co-create an inclusive city: Invest in human talent, including skills, leadership, and entrepreneurship; align education and training to career paths; expand the role of boroughs as social labs; empower citizens and community-led projects; make the city welcoming to new residents; and enable cocreation in open and public spaces.
Financing mechanisms	The lack of financing mechanisms for monitoring the biodiversity intervention, even though a huge investment was put in place for the initial plan design and implementation since 2021.	Section 10: Private incentives to integrate the public funding related to planned actions. The “Donate a tree” initiative increases the sense of ownership for the public urban green.				The plan was majorly financed through the city and ministry of the environment; nonetheless private sector companies were also slightly considered.			No mention for any financing mechanisms for the plan implementation.	
Monitoring and Evaluation	Action 20 encourages the monitoring of the plan periodically to ensure its sustainability. Nonetheless does not ensure a clear mechanism for its monitoring.					Actions in the Programme of Green Spaces 2013-2025 and Guidelines for Management and Use of Municipal Forests will continue. Implementation of the plan is monitored yearly.		The action is aimed at developing a system for the city to encourage investors and developers to implement the idea of eco-construction and at developing guidelines that can be attached, among others, to tender specifications. The guidelines will indicate the rules for creating new buildings and adapting existing buildings to ecological principles, with particular emphasis on energy efficiency.		Increase in the maintenance of accessible open and green spaces in the city per capita through a co-creation process ensuring inclusivity.

Legend: Green: highlighted category (positive evaluation), yellow: highlighted category (average evaluation), Red: highlighted category (negative evaluation): white: Neutral Evaluation.

Table 5: Total of scores received by the cities in each of the 6 macro categories.

	Barcelona	Turin	Utrecht	Hamburg	Ghent	Aarhus	Lahti	Porto	Wroclaw	Thessaloniki	
	Urban Nature Pan 2030	Piano Strategico Dell'infrastruttura Verde	Vision Green structure Utrecht 2030	Natürlich Hamburg!	2020-2025 Climate Plan	A Greener Aarhus	green area program 2013–2025	Environment quick guide	Climate Change Adaptation Plan 2030	Resilient Thessaloniki strategy for 2030	Total/
Urban Biodiversity Goals, targets and Actions	27	23	11	28	22	24	21	16	18	20	32
Urban Governance and commitment to implementation	17	8	16	12	15	14	13	7	9	13	20
Institutional support and Policy integration	15	11	10	11	12	14	13	12	11	15	16
Public Participation and collaborative governance mechanisms	19	20	17	7	17	20	15	12	13	15	20
Financing mechanisms	6	10	9	10	0	2	16	0	8	11	16
Monitoring and Evaluation	14	3	14	11	9	3	15	3	11	9	16
	98	75	77	79	75	77	93	50	70	83	120

Legend: Light green=highest - Yellow= medium, Grey = lowest

Annex 4: Graphical representation for the plans

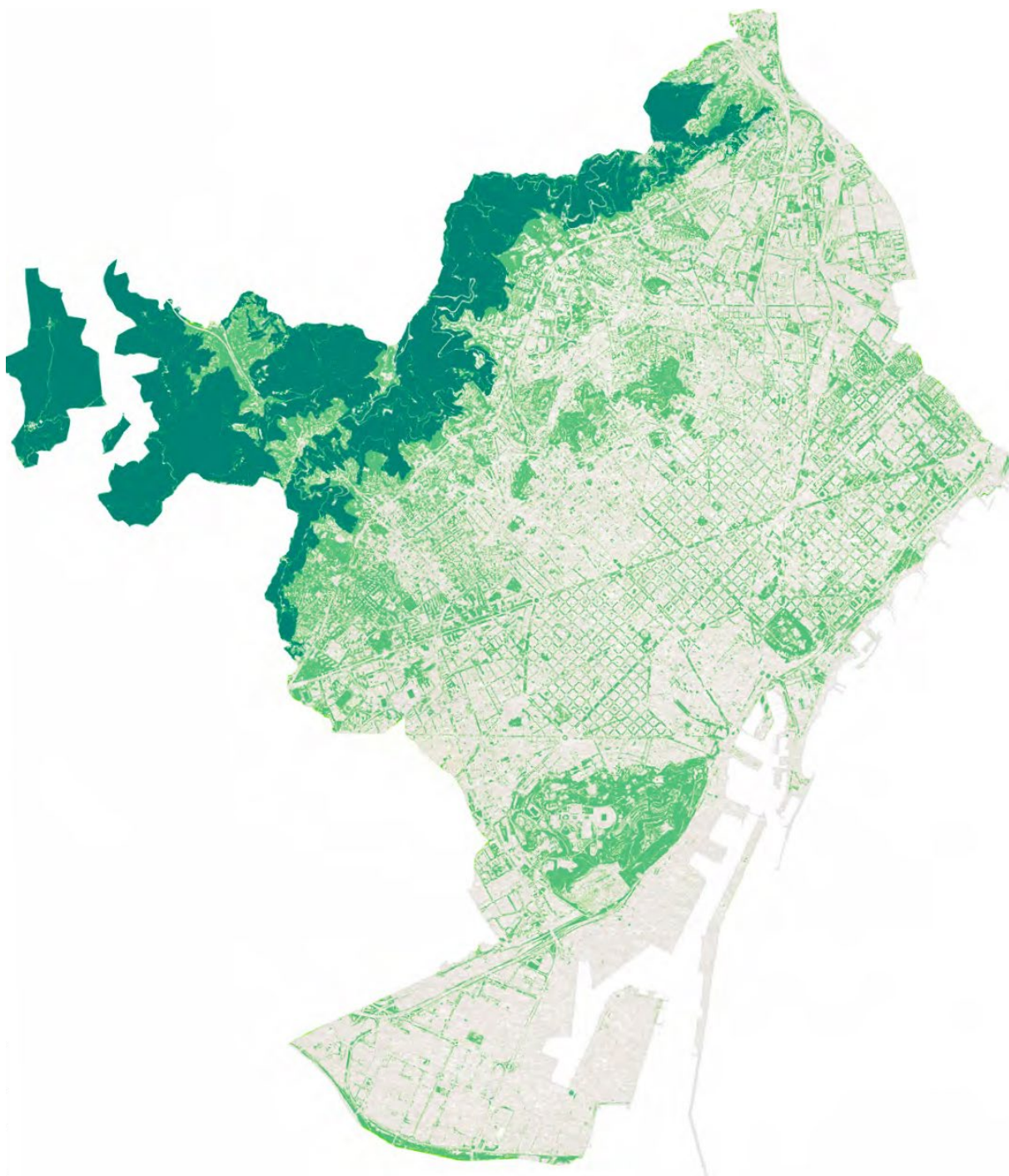


Figure 1: Barcelona Area of plant cover identified from the sky (NDVI).

Source: Barcelona Regional. See more: <https://ajuntament.barcelona.cat/atlesbiodiversitat/en/>

(City of Barcelona, 2021)

Il sistema del verde

Torino
Greenprint

LEGENDA

- Viabilità
- Aree verdi ricreative
- Aree verdi (pubbliche e private)
- Aree agricole (pubbliche e private)
- Aree boschive (pubbliche e private)
- Fiumi, laghi e corsi d'acqua

Estensione territoriale: 130 km²35,6% della superficie del Comune è costituita da aree verdi (circa 47 km²)52,56 m² di verde per abitante

Aree verdi: 23,5%

Aree agricole: 4,7%

Aree boschive: 7,4%

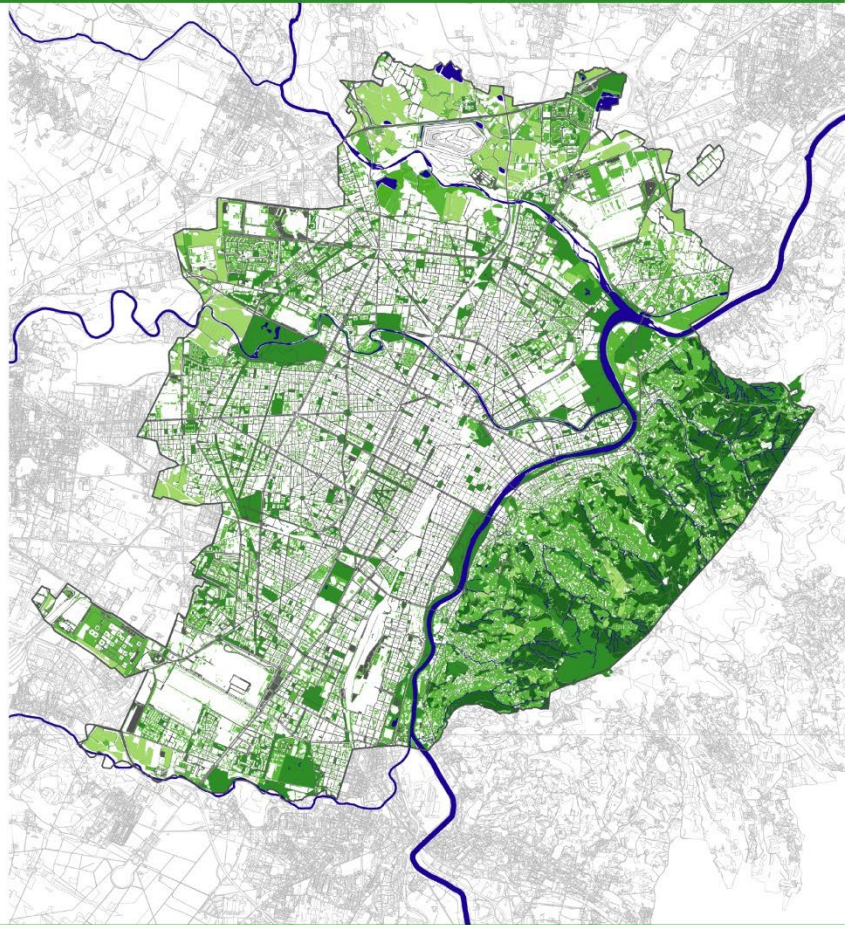


figure 2: Turin Green Infrastructure, source: (Comune di Torino, 2020)

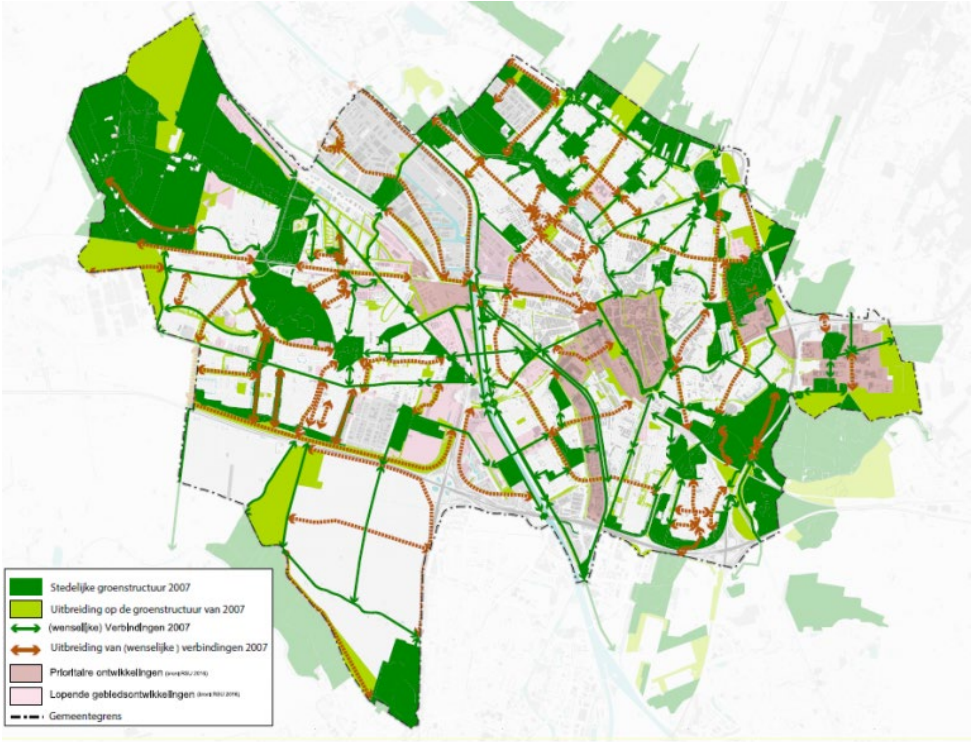


Figure 3: Vision Green structure Utrecht 2030, dated 2018

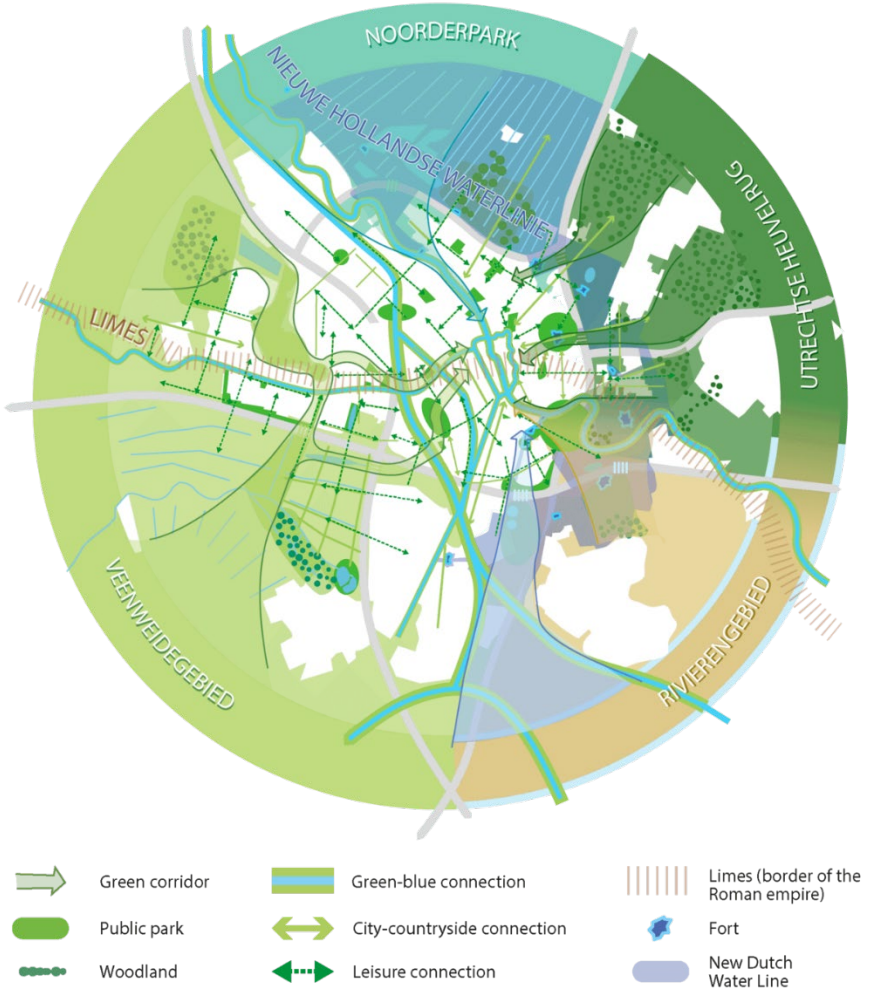
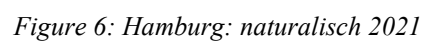
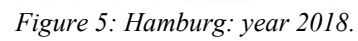


Figure 4: Utrecht vision 2040



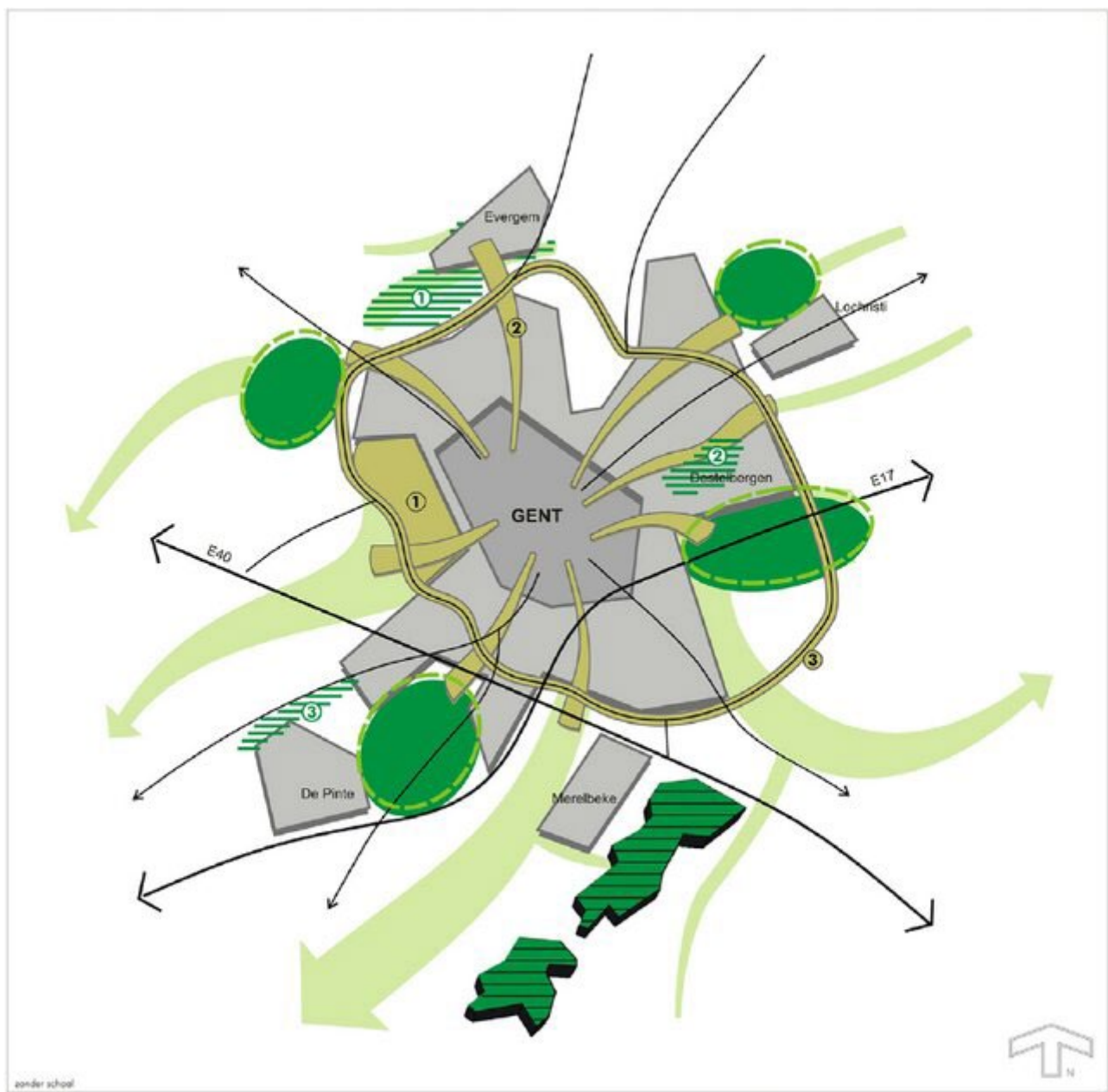


Figure 7: Ghent Biodiversity Plan 2020-2030

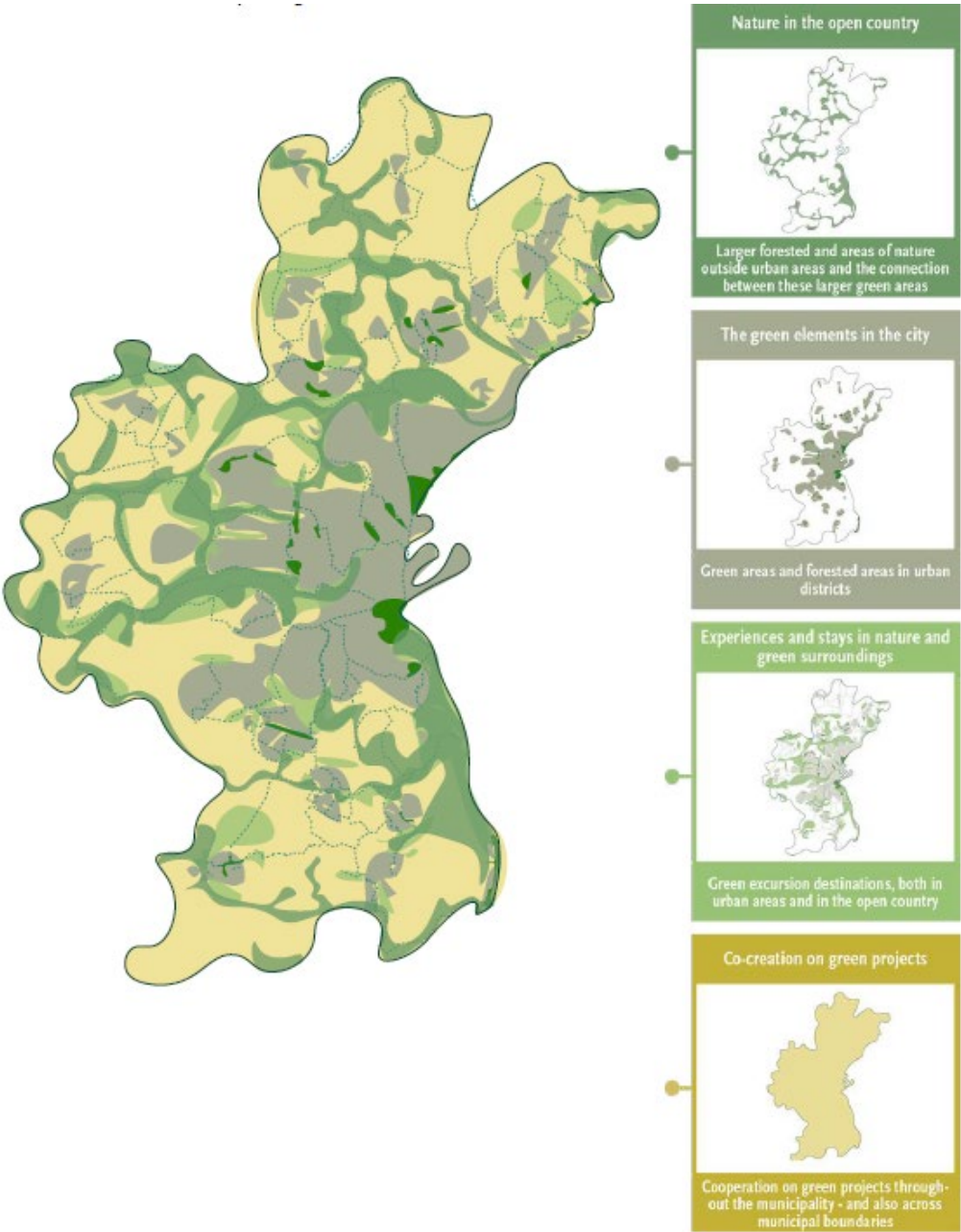


Figure 8: Green Plan of the city of Aarhus 2024-2030.



Figure 9: Green Plan of Lahti 2025 as recreation areas indicated areas. Recreation areas are indicated more than 300 m² per inhabitant. Source: (City of Lahti, 2022)

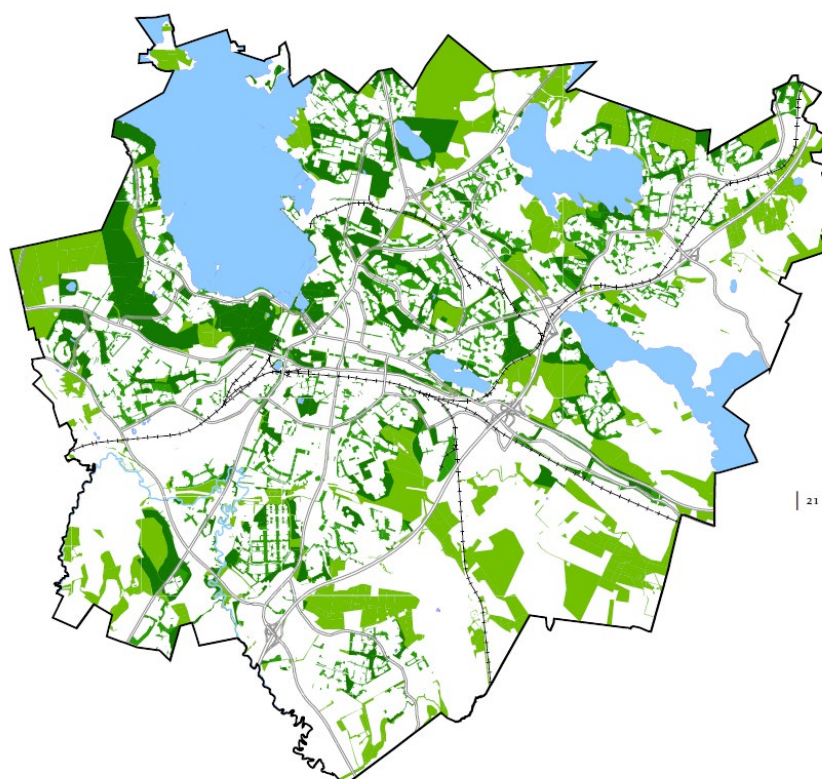


Figure 10: A master plan owned and managed by the city green areas department including agricultural and forestry areas and valuable landscape areas (3402 ha). Source: (City of Lahti, 2013)

Regional green area network

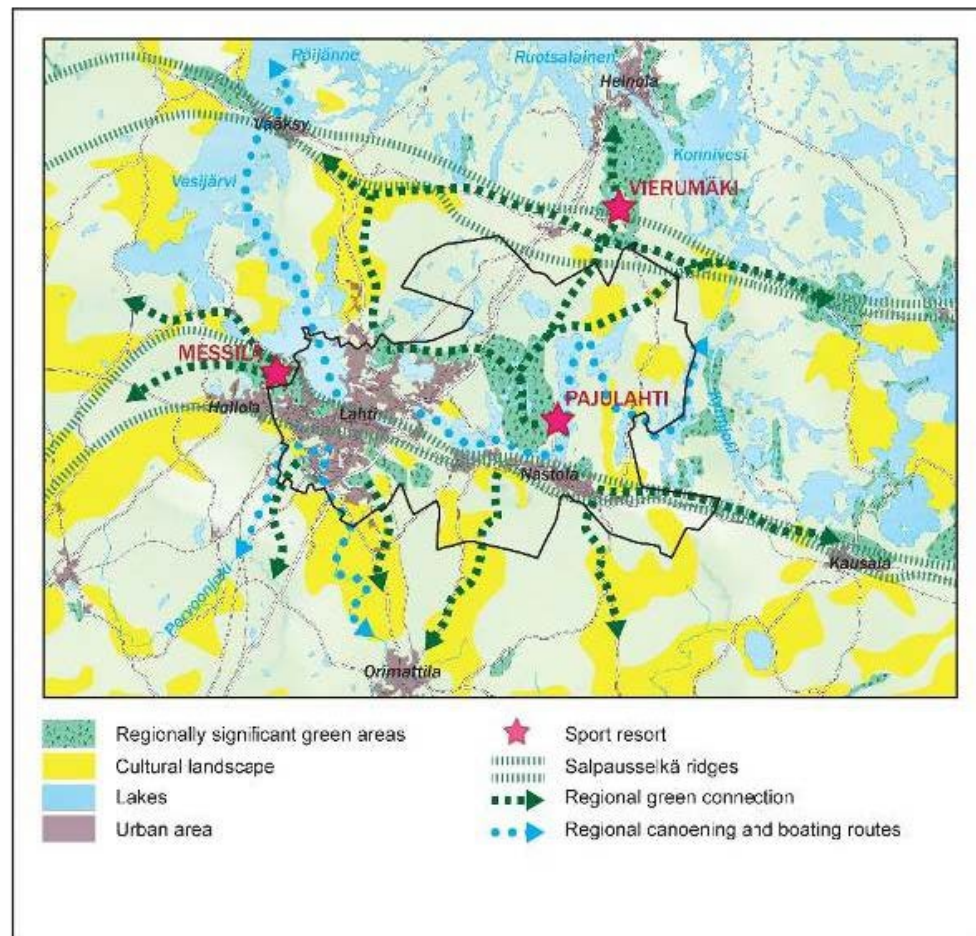


Figure 11: Salpausselkä ridge forms a green corridor for urban area of Lahti, while forests and cultural landscapes connect the rural and urban areas. Source: Lahti city strategy 2030.

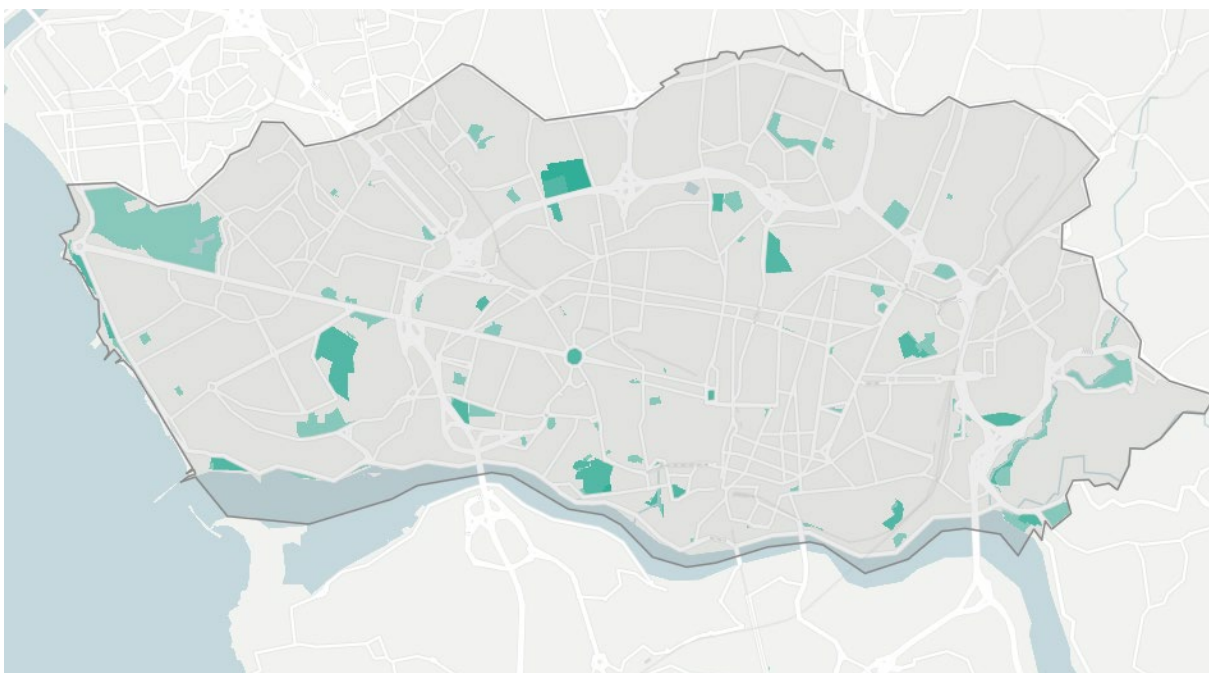


Figure 12: Porto's green parks and public gardens <https://investporto.pt/en/why-porto/sustainable-city/#:~:text=Porto%20is%20also%20actively%20working,in%20urban%20regeneration%20and%20construction>. Source: CMP (2023) • Analysis by InvestPortoCreated with [Datawrapper](#)

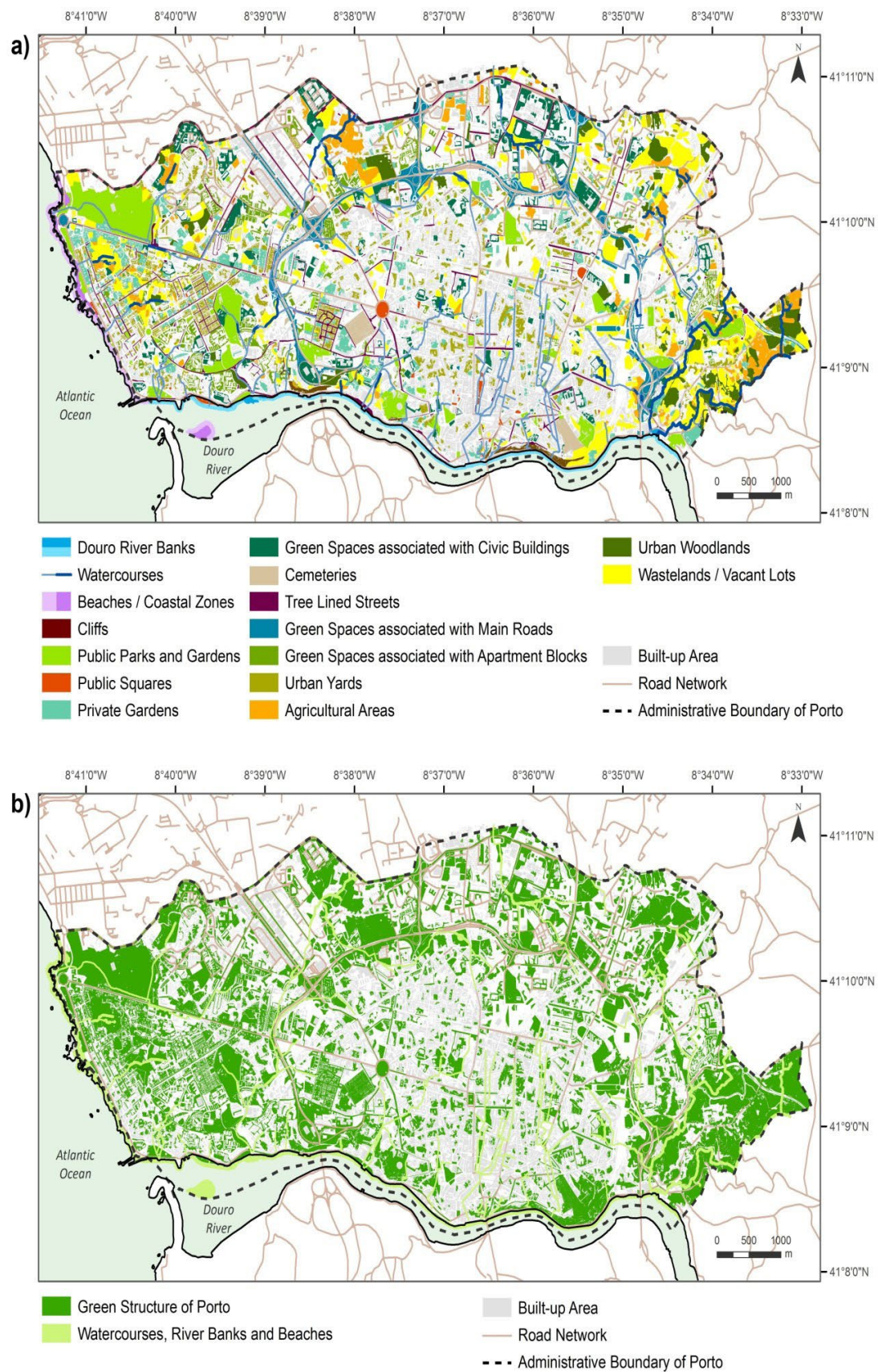


Figure 13: Green plan of the city of Porto, 2013. source: Farinha-Marques, P., Fernandes, C., Lameiras, J. M., & Guilherme, F. (2014). Urban Green Structure in the City of Porto: Morphology and Biodiversity.

<https://www.researchgate.net/publication/292388714>

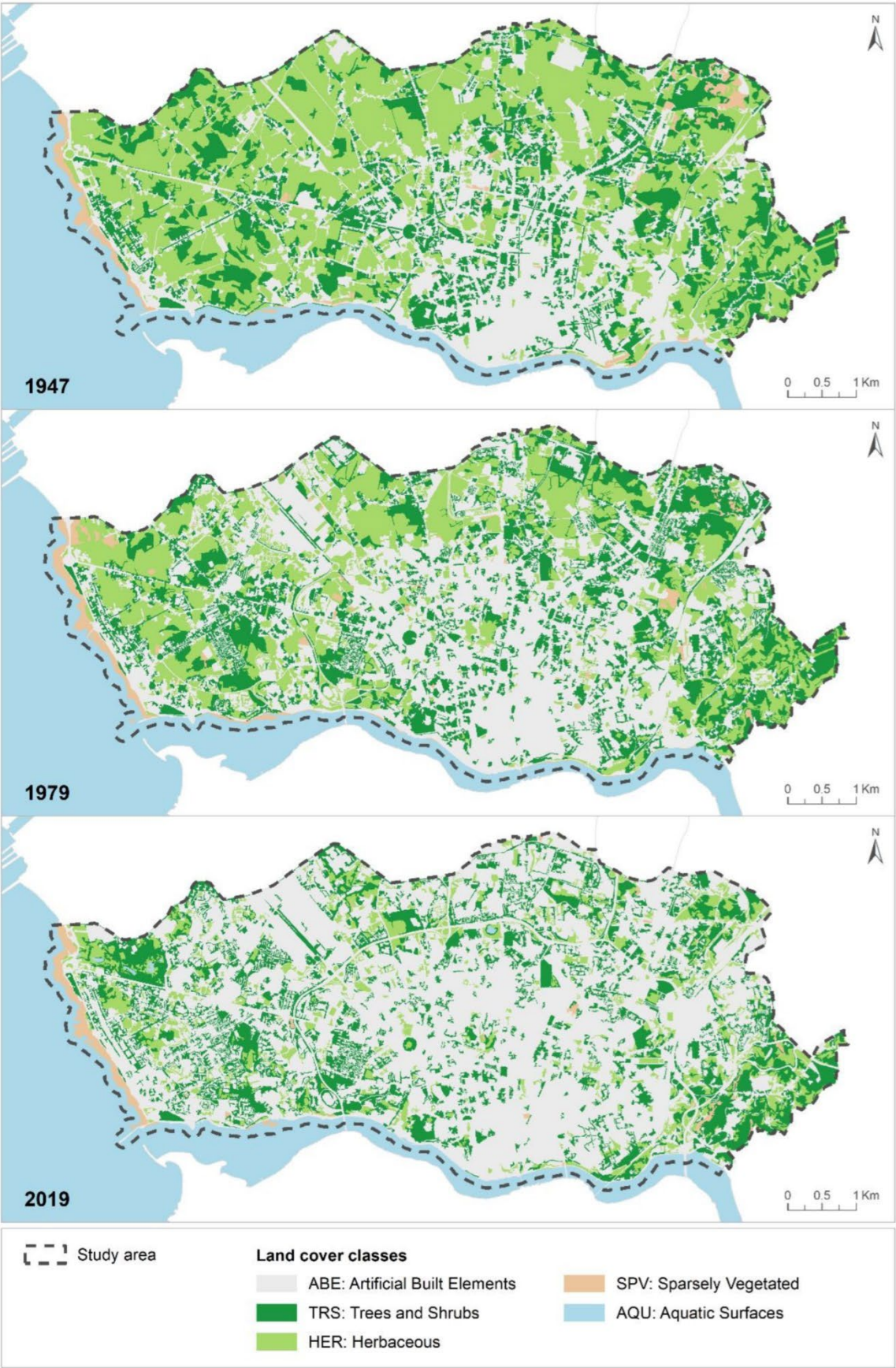


Figure 14: Land use Land cover maps of Porto in 1947, 1979, and 2019.
Source: Guilherme F, Moreno EG, Gonçalves JA, Carretero MA, Farinha-Marques P. Looking Closer at the Patterns of Land Cover in the City of Porto, Portugal, between 1947 and 2019—A Contribution for the Integration of Ecological Data in Spatial Planning. Land. 2022; 11(10):1828. <https://doi.org/10.3390/land11101828>

Wrocław jeszcze bardziej **ZIELONY**

czyli nasadzenia wzdłuż 15 ulic i placów

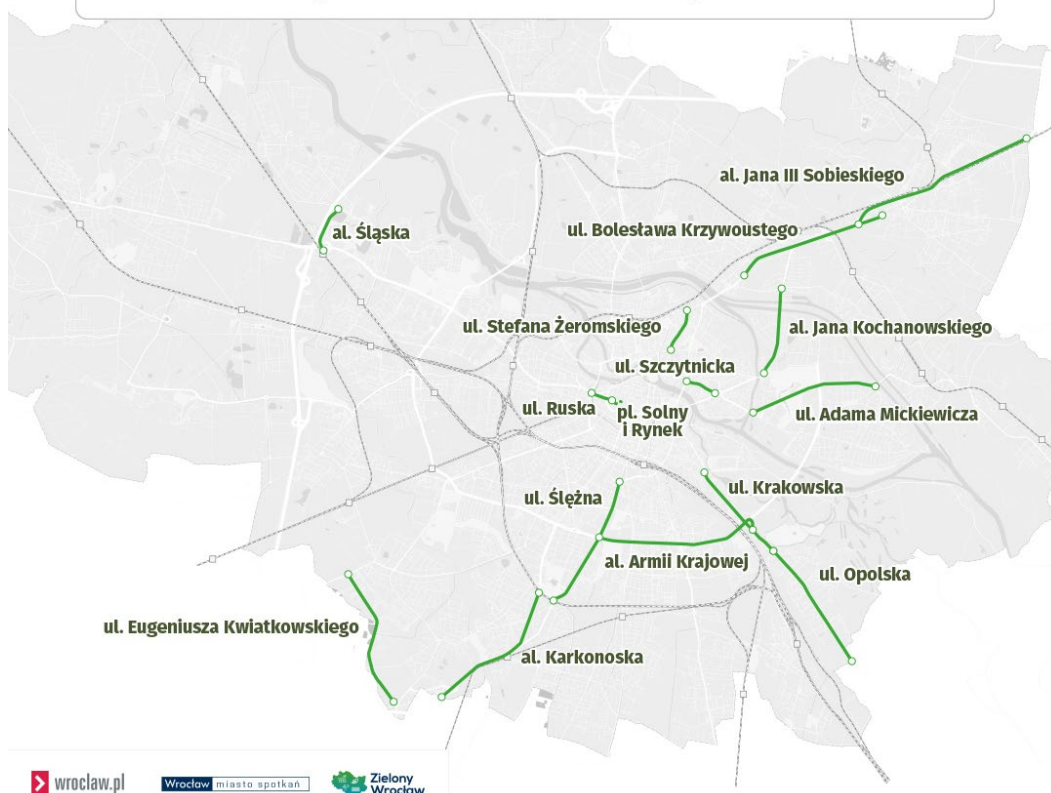


Figure 15: Wrocław Green Plan, 2019. Source: PLAN ADAPTACJI MIASTA WROCŁAWIA DO ZMIAN KLIMATU. <https://www.wroclaw.pl/en/wroclaw-becomes-even-greener-fifteen-main-streets-and-squares-will-soon-turn-green-list-map>

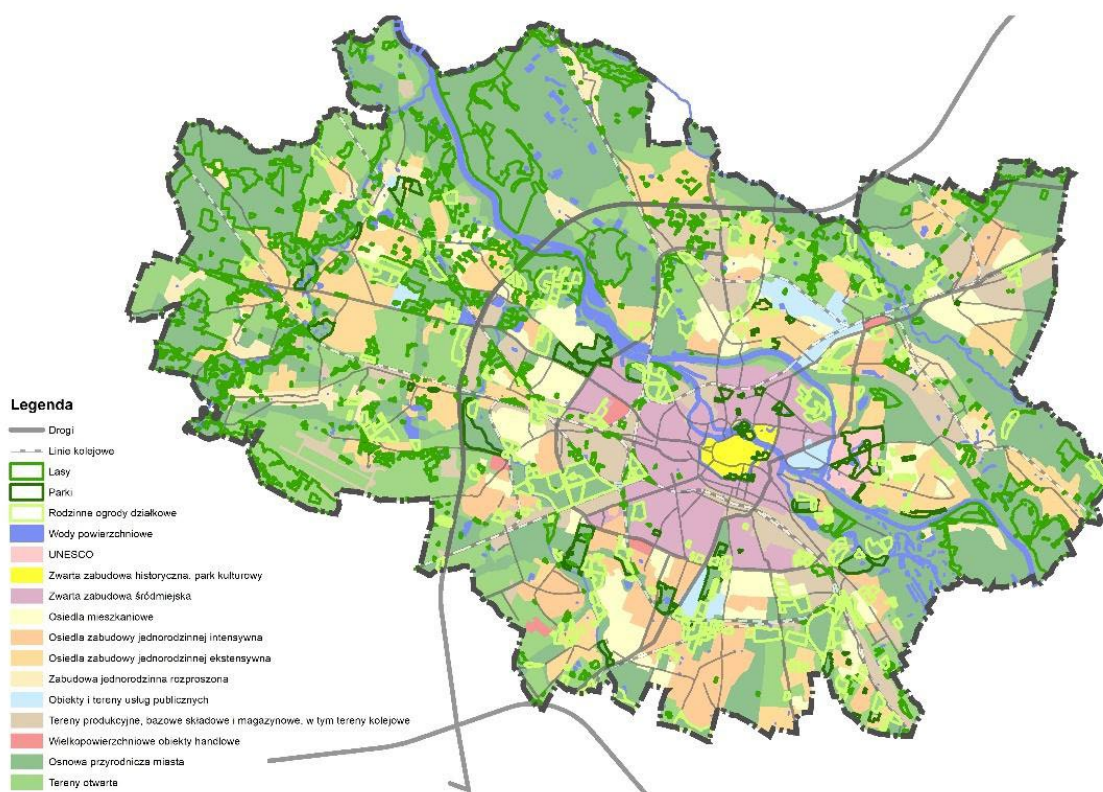


Figure 16: Green Areas of Wrocław, Source: PLAN ADAPTACJI MIASTA WROCŁAWIA DO ZMIAN KLIMATU.

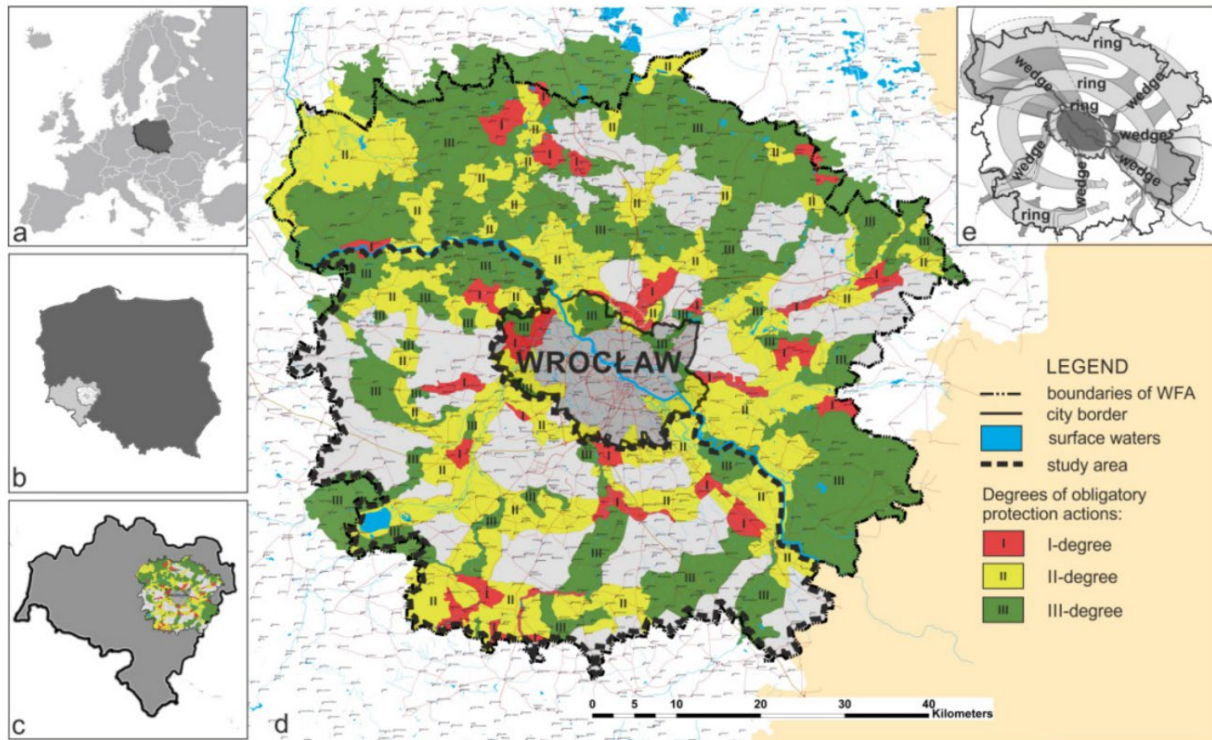


Figure 17: Wrocław Functional Area (WFA). Source: Niedźwiecka-Filipiak I, Gubański J, Podolska A, Rubaszek J, Witkiewicz A. Potential Elements of Green Infrastructure (PeGI) Inside the Core of the Village (CoV): A Case Study of Wrocław Functional Area (WFA) in Poland. *Sustainability*. 2022; 14(3):1611. <https://doi.org/10.3390/su14031611>



Figure 18: Green spaces in the urban agglomeration of Thessaloniki. Source: Master Plan Agency of Thessaloniki (2006) after Papageorgiou, M., & Gemenetzi, G. (2018). Setting the grounds for the green infrastructure in the metropolitan areas of athens and thessaloniki: The role of green space. *European Journal of Environmental Sciences*, 8(1), 83–92. <https://doi.org/10.14712/23361964.2018.12>