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Latvia – Lithuania

Lietuvos inžinerijos kolegija

Latvia University of Life Sciences and Technologies

Legal integration of climate-adaptive plantings

Online seminar «On the Way to More Resilient and Climate-Adaptive Urban Green Spaces in Latvia and Lithuania», 14 May 2026

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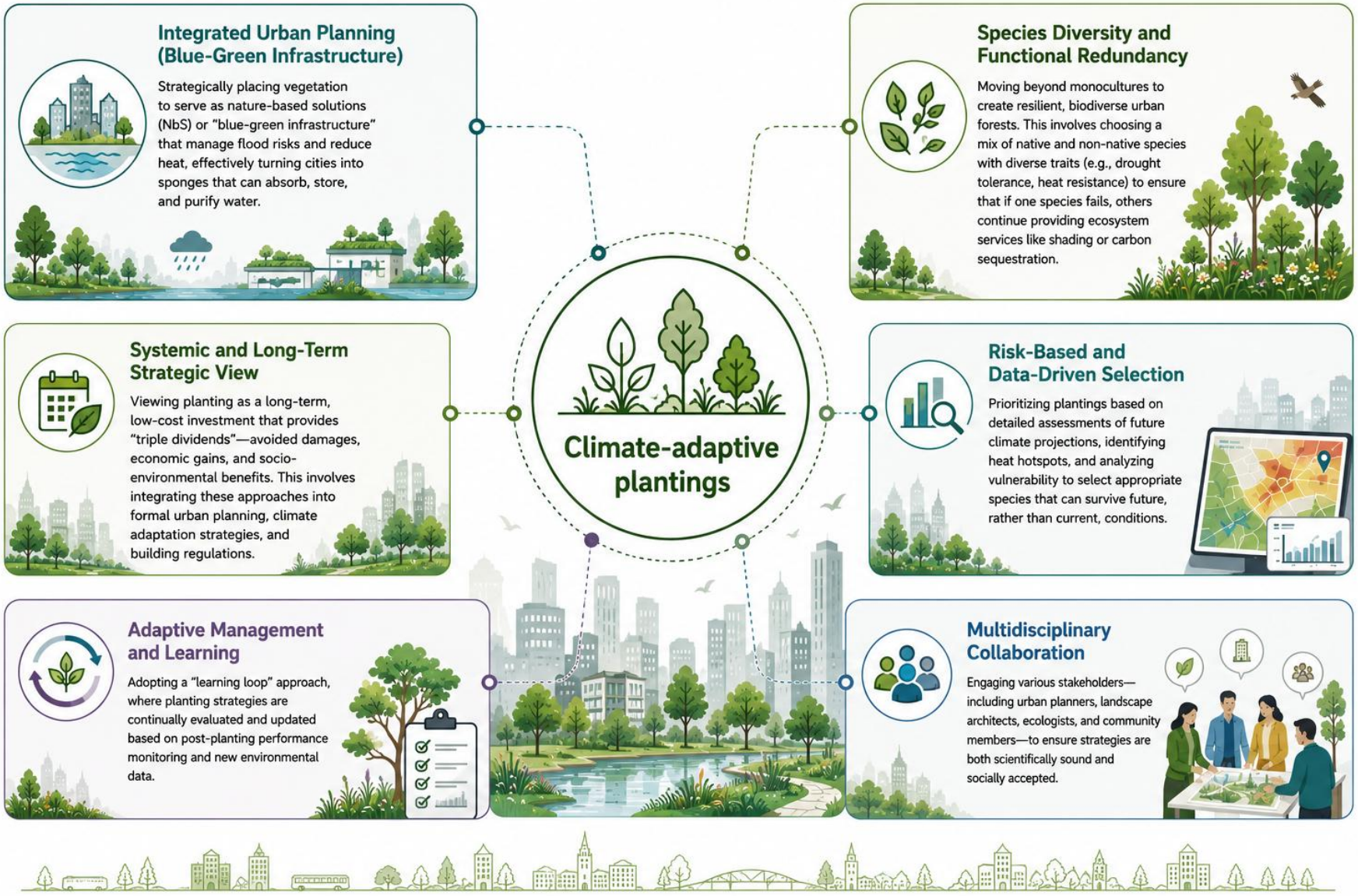
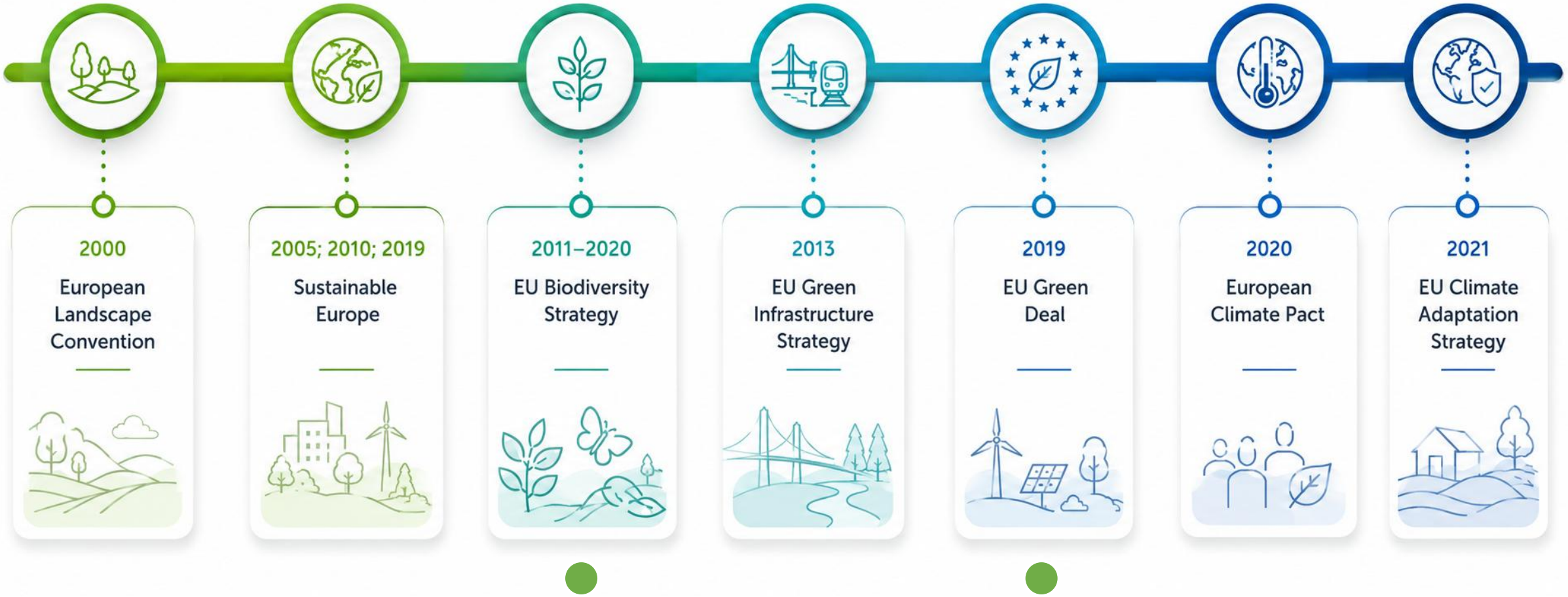
This material has been produced within the Interreg VI-A Latvia–Lithuania Programme 2021–2027 project “Enhancing Urban Resilience through Climate-Adaptive Green Space Planning in Latvia and Lithuania” UrbanGreenAdapt (LL-00273) with the financial support of the European Union.
Its contents are the sole responsibility of Latvia University of Life Sciences and Technologies and Lietuvos inžinerijos kolegija Higher Education Institution and do not necessarily reflect the views of the European Union.

Climate-adaptive plantings are planting approaches that use plant species and vegetation structures suited to changing climate conditions — such as higher temperatures, drought, flooding, heavy rainfall, and urban heat — in order to create more resilient, sustainable, and healthy urban environments. They are commonly associated with climate adaptation, biodiversity enhancement, and nature-based solutions in cities.



The main international documents related to the planning of landscapes and urban green areas

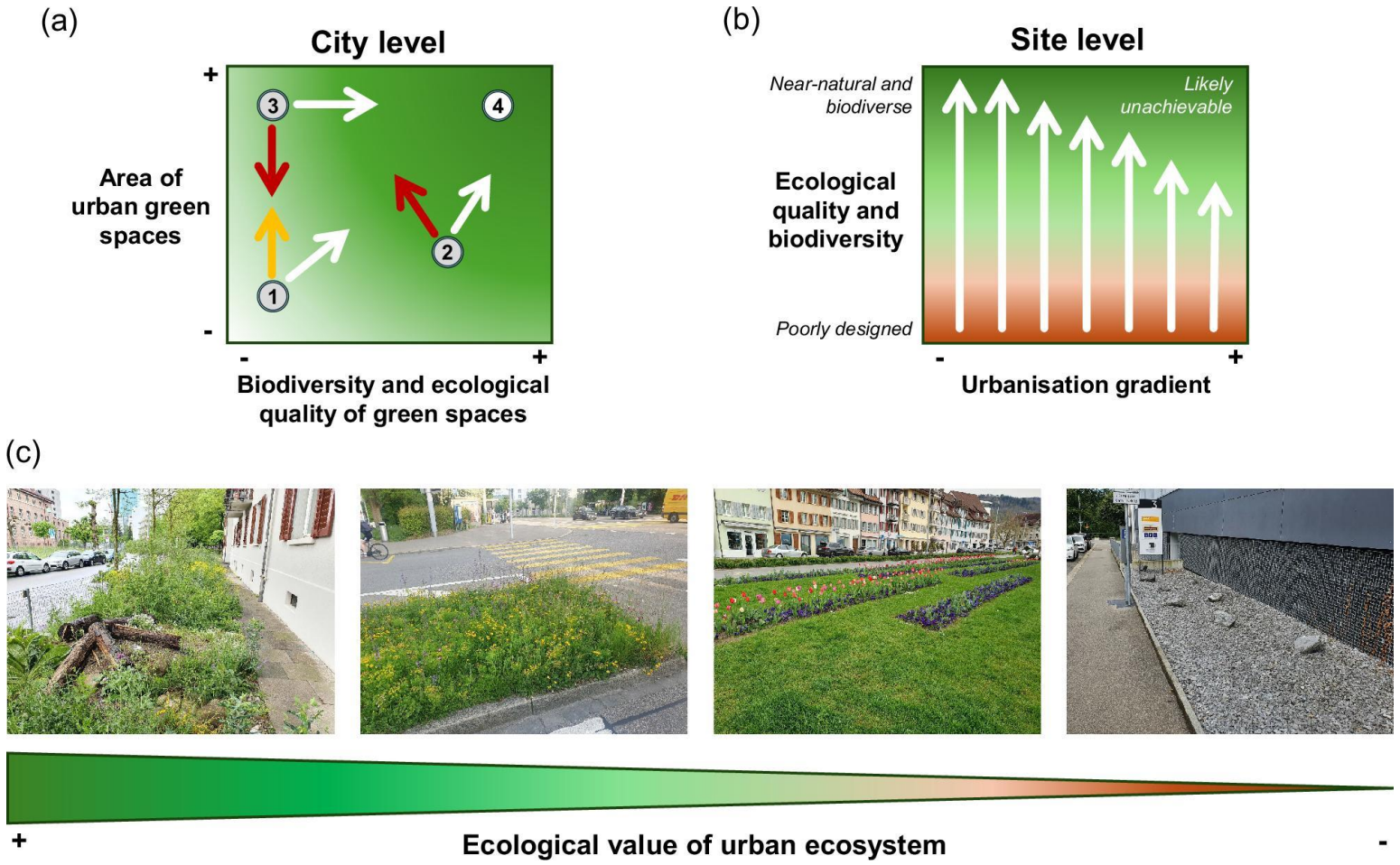


Nature restoration in European cities: Implementing the EU Nature Restoration Regulation

EU Biodiversity Strategy – key points:

Continuing ecosystem degradation and biodiversity loss across the EU

- Protection is not enough!
- Voluntary targets of the 2020 EU Biodiversity Strategy: not met, so the reinforced approach is needed



https://www.nature.com/articles/s42949-025-00218-8?utm_source=chatgpt.com

EU Green Deal

Overall, the European Green Deal **aims to make the European Union's economy sustainable**. The action plan prepared as part of the Green Deal, in turn, includes two objectives:

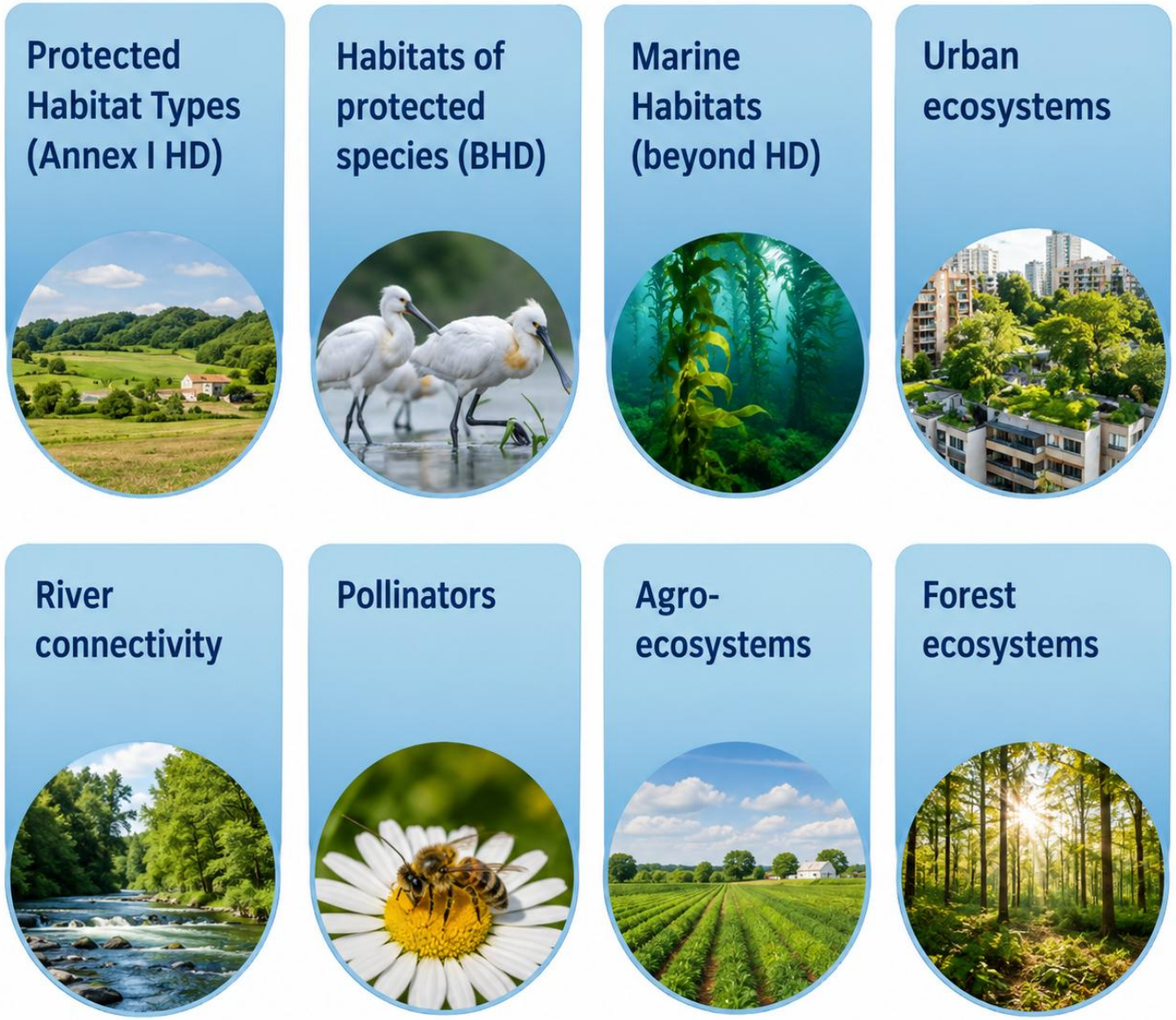
- promoting **resource efficiency** in the transition to a circular economy,
- restoring **biodiversity** and **reducing pollution**.

Source: [European Commission](), 2025

Urban ecosystem targets

- **UNTIL 2030:** no net loss of total national levels of urban green space and tree canopy cover in «urban ecosystem areas.»

- **AFTER 2030**: increasing trend of:
  - Overall national level of urban green space
  - Urban tree canopy cover, in each urban ecosystem area

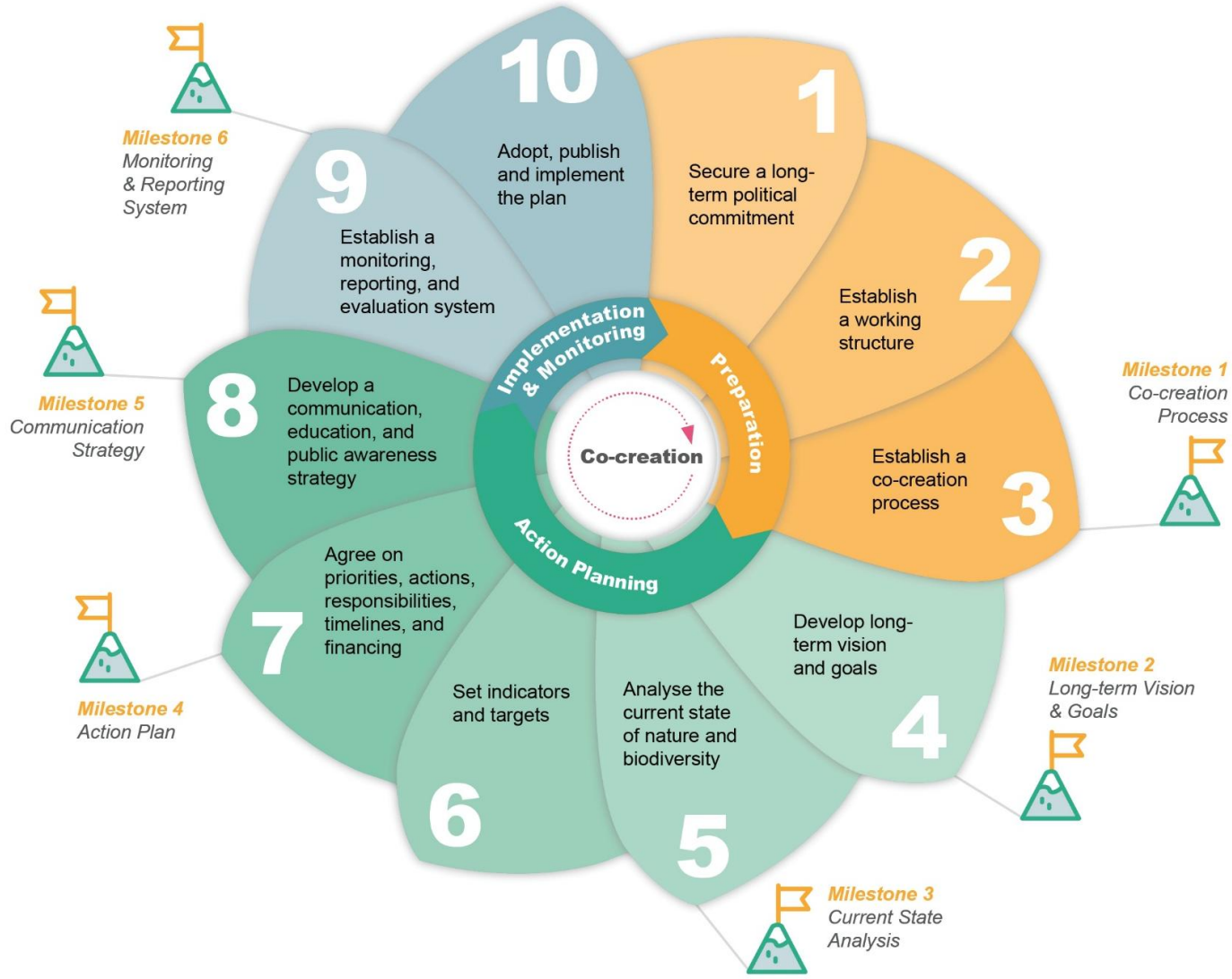


Urban nature plans

New Project UNPplus Supports Cities in Imagining a More Sustainable and Inclusive Future

UNPplus, a new Horizon Europe project coordinated by Politecnico Milano and dedicated to supporting cities in crafting and implementing Urban Nature Plans.

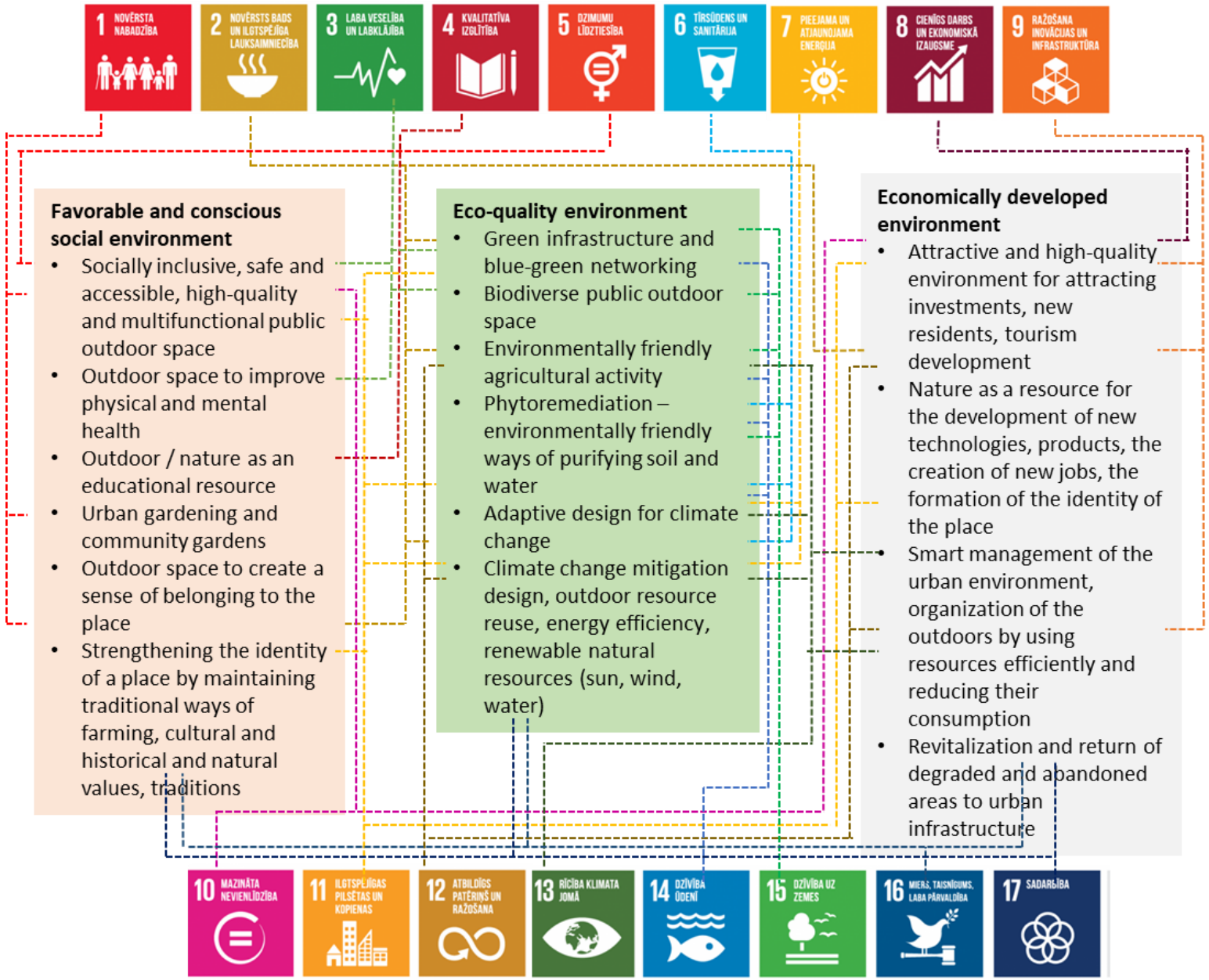
UNPs stand in that they help local authorities integrate existing policies, measures, and strategies related to urban greening at all governance levels and across planning departments.



(Source: https://environment.ec.europa.eu/topics/urban-environment/urban-nature-... (European Commission)

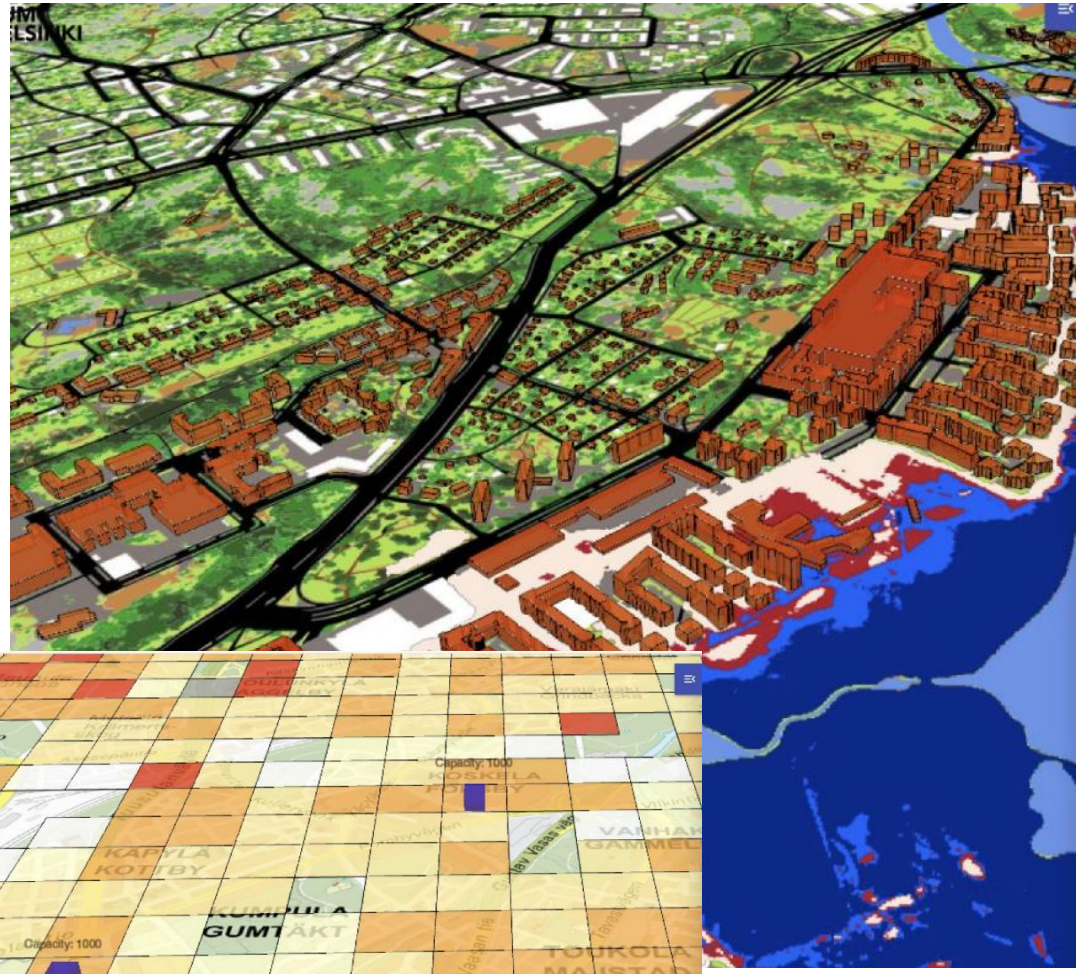
UN General Assembly resolution "Transforming our world: the 2030 Agenda for Sustainable Development" (2030 Agenda) (2015)

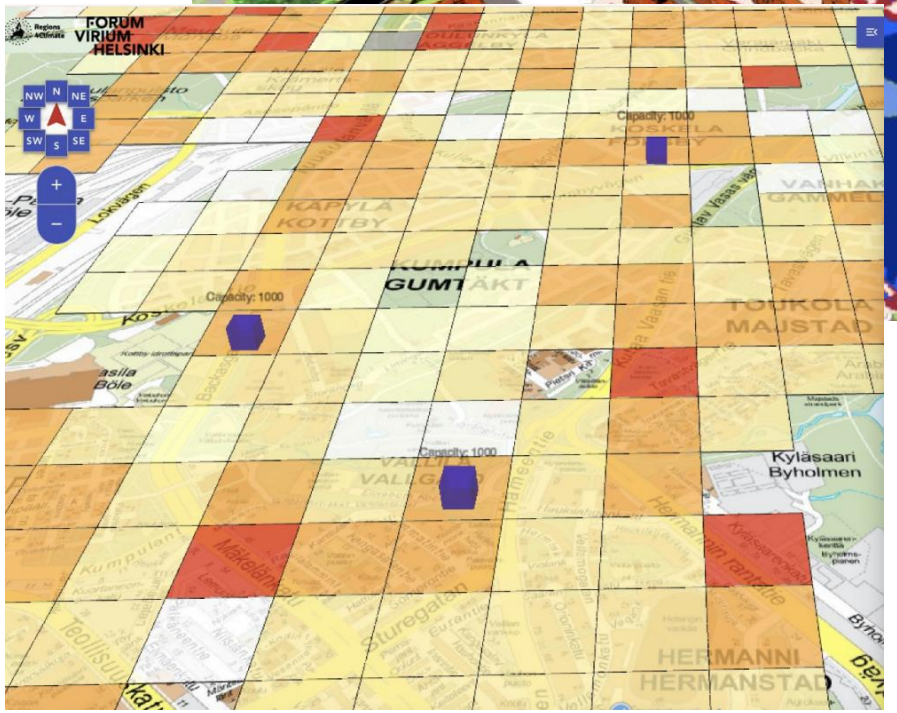
It sets out 17 Sustainable Development Goals (SDGs) and 169 sub-targets to be achieved in order to reduce global poverty and make global development sustainable.



Importance of data

Using a digital twin tool to assess climate risks and socioeconomic vulnerability in urban areas – an example from the Regions4Climate project



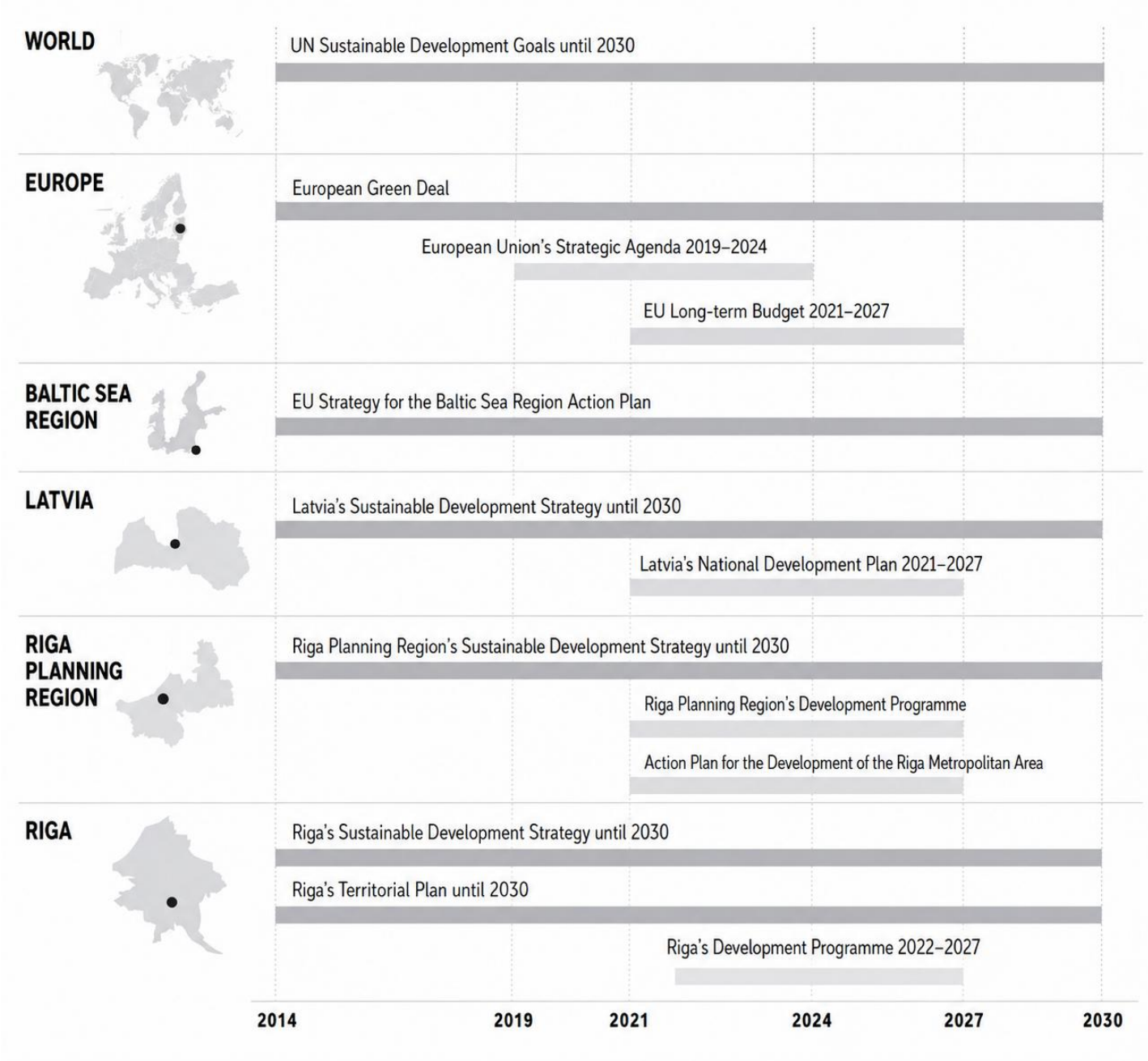


The project aims to:

- improve understanding of urban heat islands and stormwater flooding,
- promote a socially just transition towards climate resilience
- develop a digital twin demonstration tool to support climate adaptation planning and decision-making by social and health care services, rescue services, and urban and regional planners.

Sustainable development strategies. Example of Riga

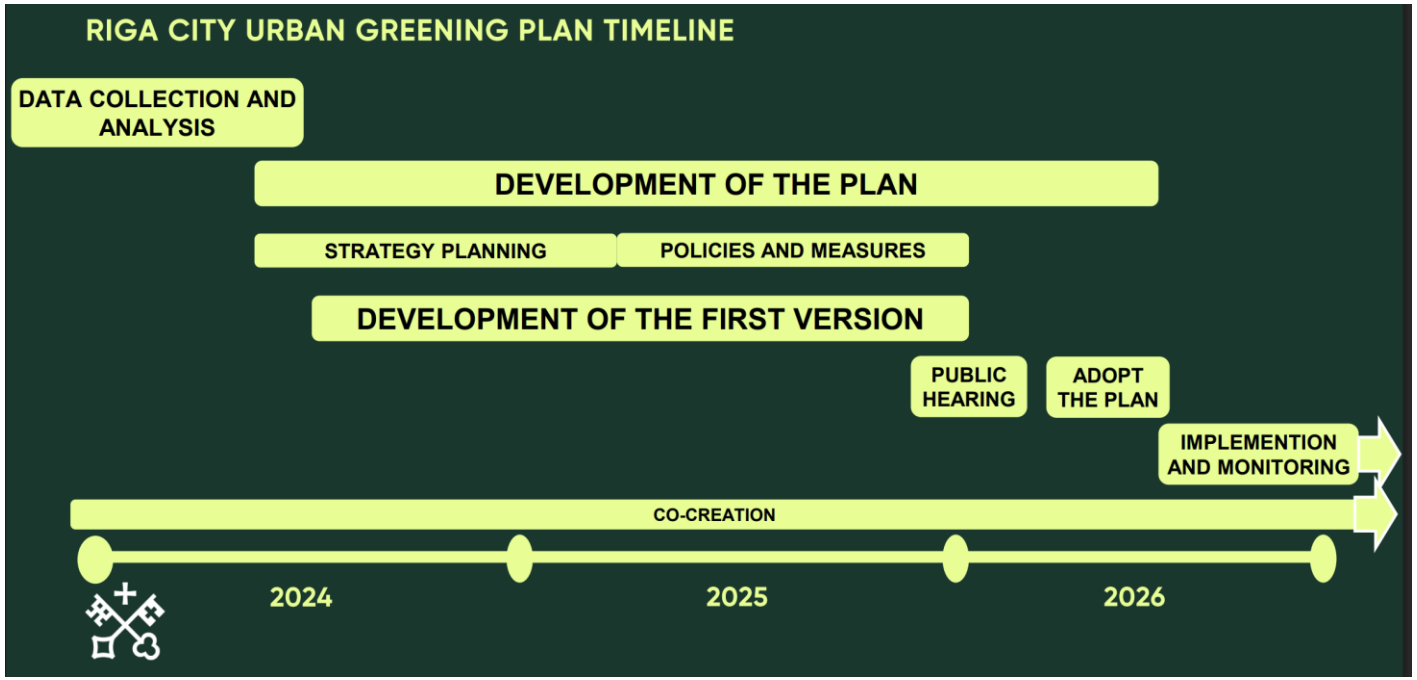
- Neighbourhood Centres
- Connectivity
- Green Infrastructure
- Urban Governance Model
- Waterfronts
- Safe Urban Environment
- Cultural and Historical Heritage

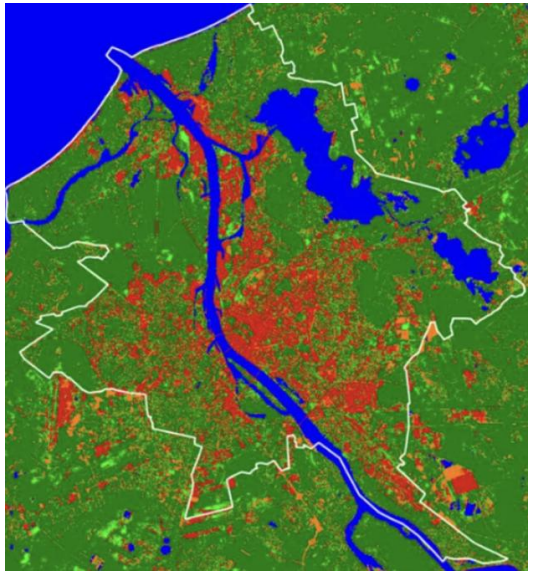


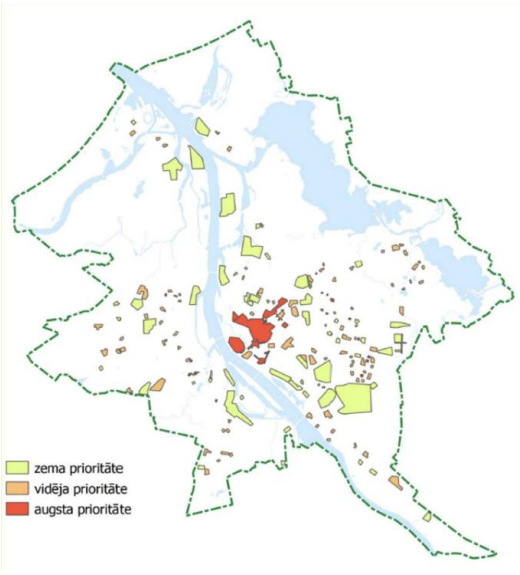
https://www.rdpad.lv/wp-content/uploads/2022/07/AP2027_Programma_Apstiprinata_1284.pdf

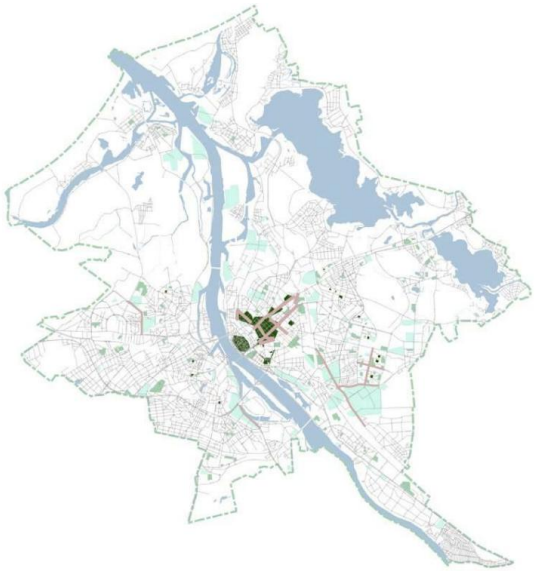
Riga experience story

Experience story on the use of satellite data products in policy planning – Case of Riga Urban Greening Plan









Next step is

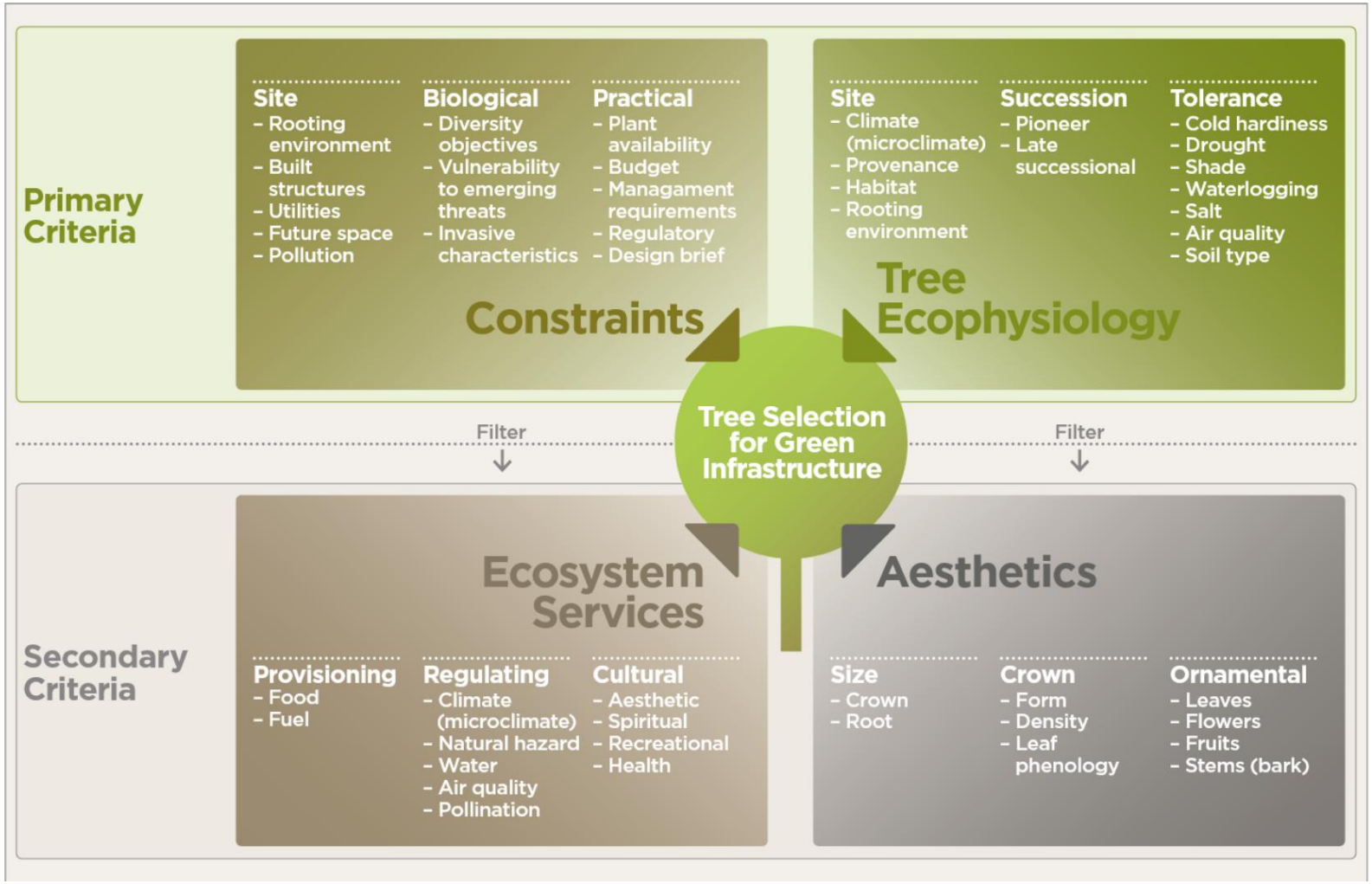
One of guidance documents is - Tree Selection for Green Infrastructure.

This project provided the opportunity to evaluate the current approach to tree species selection within the British Isles, conduct some original research on a sub-set of species and produce this guidance.

In addition a review of a wide range of published literature, indicated in the Bibliography, has also been used to underpin the recommendations.

The principles of tree selection for green infrastructure

In large-scale tree infrastructure development, it is essential to evaluate not only aesthetic aspects, but also site conditions, climate factors, ecological characteristics, and potential constraints that influence the long-term sustainability of trees in urban environments. At the same time, it is important to ensure that selected tree species can provide diverse ecosystem services over time, including climate regulation, air quality improvement, biodiversity support, and recreational value.



Trees and Design Action Group Trust. Tree Species Selection for Green Infrastructure: A Guide for Delivery

Conclusions:

•Climate-adaptive plantings are an essential component in cities;
•International and European policy frameworks increasingly emphasize the importance of urban green infrastructure;
•Urban green planning should move beyond the quantitative;
•Climate-adaptive plantings should be integrated into long-term spatial planning;
•Data-driven planning approaches;
- The selection of trees and vegetation for urban environments;
- Diverse and climate-resilient species selection;
- multidisciplinary collaboration;
- Governance and implementation mechanisms;
- Climate-adaptive plantings understanding.

References

- European Commission. (2013). Green Infrastructure (GI) — Enhancing Europe's Natural Capital (COM(2013) 249 final). Brussels: European Commission.
- European Commission. (2019). The European Green Deal (COM(2019) 640 final). Brussels: European Commission.
- European Commission. (2020). EU Biodiversity Strategy for 2030: Bringing nature back into our lives (COM(2020) 380 final). Brussels: European Commission.
- European Parliament and Council. (2001). Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment. Official Journal of the European Communities, L197, 30–37.
- European Parliament and Council. (2009). Directive 2009/147/EC on the conservation of wild birds. Official Journal of the European Union, L20, 7–25.
- European Parliament and Council. (2011). Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. Official Journal of the European Union, L26, 1–21.
- European Parliament and Council. (2014). Directive 2014/52/EU amending Directive 2011/92/EU on the assessment of the effects of certain public and private projects on the environment. Official Journal of the European Union, L124, 1–18.
- European Union. (2024). Regulation (EU) 2024/1991 on nature restoration. Official Journal of the European Union, L 2024/1991.
- Council of Europe. (2000). European Landscape Convention. Florence: Council of Europe.
- Council of the European Communities. (1992). Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora. Official Journal of the European Communities, L206, 7–50.
- EU Nature Restoration Regulation (2024) IUCN Briefing https://iucn.org/sites/default/files/2024-08/iucn-briefing-eu-nature-restoration-regulation-final-1.pdf
- Binkley, D. and Fisher, R.F. (2013) Ecology and Management of Forest Soils, 4th edition. Wiley-Blackwell, Chichester, UK.
- BSI (2014) BS 8545 Trees: from nursery to independence in the landscape - Recommendations. British Standards Institution.
- Costello, L.R., Perry, E.J., Matheny, N.P., Henry, J.M. and Geisel, P.M. (2003) Abiotic Disorders of Landscape Plants: A Diagnostic Guide. University of California, Agricultural and Natural Resources Publication 3420, CA, USA.
- Dee, D.P., Uppala, S.M., Simmons, A.J., Berrisford, P., Poli, P., Kobayashi, S., Andrea, U., Balmaseda, M.A., Balsamo, G., Bauer, D.P. and Bechtold, P. (2011) The ERA-Interim reanalysis: Configuration and performance of the data assimilation system. Quarterly Journal of the Royal Meteorological Society, 137(656), pp. 553–597.
- Hirons, A.D. and Percival, G.C. (2012) Fundamentals of Tree Establishment: A Review. In: Johnston, M. and Percival, G. (eds.) Proceedings of the Urban Trees Research Conference, 'Trees, People and the Built Environment'. Held in Birmingham, 13–14 April 2011. Forestry Commission.
- Hirons, A.D. and Thomas, P.A. (2018) Applied Tree Biology. Wiley-Blackwell, Oxford, UK.
- Johnston, M. and Hirons, A.D. (2014) Urban Trees. In: Dixon, G. and Aldous, D. (Eds.) Horticulture – Plants for People and Places, Volume 2. Springer, pp. 693–711.
- Lambers, H., Stuart Chaplin III, F. and Pons, T.L. (2008) Plant Physiological Ecology, 2nd edition. Springer, Berlin, Germany.
- Met Office: https://www.metoffice.gov.uk/public/weather/climate/
- Millennium Ecosystem Assessment (2005) Ecosystems and Human Well-being: Synthesis. Island Press, Washington, DC.
- Orlandini, S., Vanos, J.K., Matzarakis, A., Massetti, L. and Petralli, M. (2017) Urban Forestry and Microclimate. In: Ferrini, F., Van Den Bosch, C.C.K. and Fini, A. (eds.) Routledge Handbook of Urban Forestry. Taylor & Francis.
- Peel, M.C., Finlayson, B.L. and McMahon, T.A. (2007) Updated world map of the Köppen-Geiger climate classification. Hydrology and Earth System Sciences Discussions, 4(2), 439–473.
- Sjöman, H., Morgenroth, J., Deak-Sjöman, J., Sæbø, A. and Kowarik, I. (2016) Diversification of the urban forest—Can we afford to exclude exotic tree species? Urban Forestry & Urban Greening, 18, 237–241.
- Sjöman, H., Hirons, A., Deak-Sjöman, J. (2017) Criteria in the selection of urban trees for temperate urban environments. In: Ferrini F., Konijnendijk van den Bosch, C., Fini, A. (Eds.) Routledge Handbook of Urban Forestry. Routledge, pp. 339–362.
- TDAG (2014) Trees in Hard Landscapes; A Guide for Delivery. Trees and Design Action Group.

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