

THE FUTURE OF THE URBAN FOREST

exploring the systemic granularity of the urban green domain to navigate towards a new paradigm

Project context

With nearly 70% of people living in cities by 2050, our urban environments are being put to the test, with more severe and frequent heat waves, droughts, floods, ongoing biodiversity loss, air pollution, and land subsidence. To sustain and increase the liveability and climate resilience of cities, the design and implementation of urban green infrastructure, with the urban forest as its backbone, is one of the most critical solutions. However, the current indifference that runs through the veins of the anthropocentric political, economic, and socio-technical systems limits the urban forest from being a central part of the built environment.

i-Tree 2.0-NL

As an attempt to put urban trees on the political agenda, the USDA Forest Service developed and launched the i-Tree software in 2006 to quantify the ecosystem services provided by urban trees. In 2019, the first version became applicable to the Netherlands. This project is part of the three-year-long follow-up, i-Tree 2.0-NL, consisting of a consortium of 28 stakeholders to further elaborate the cooling performance, model growth curves, and synchronise the potential of the software for the stakeholders. This project concerns the latter.

Project approach

Rather than an interface development project facilitating the adoption potential of i-Tree, the systemic granularity of the urban green domain is explored. This is because long-term change and a radical transformation of the urban forest's position in our society can only be manifested through the coinciding assemblage of new behaviours, industrial relations, policies, and socio-cultural narratives next to technology advances. Therefore, the technological proposition is used as a vehicle to discover and navigate this new paradigm, oscillating between levels of scale.

This journey resulted in a combination of process diagrams, opportunity areas for (re)connecting stakeholders, an interface design with a development timeline, eight concrete new practices and six speculations for a potential new system, together making part of the new paradigm tangible.

PART 1

the paradigm
understanding the transitions

PART 2

the system
mapping the current processes

PART 3

the opportunities
exploring possibilities for (re)connection

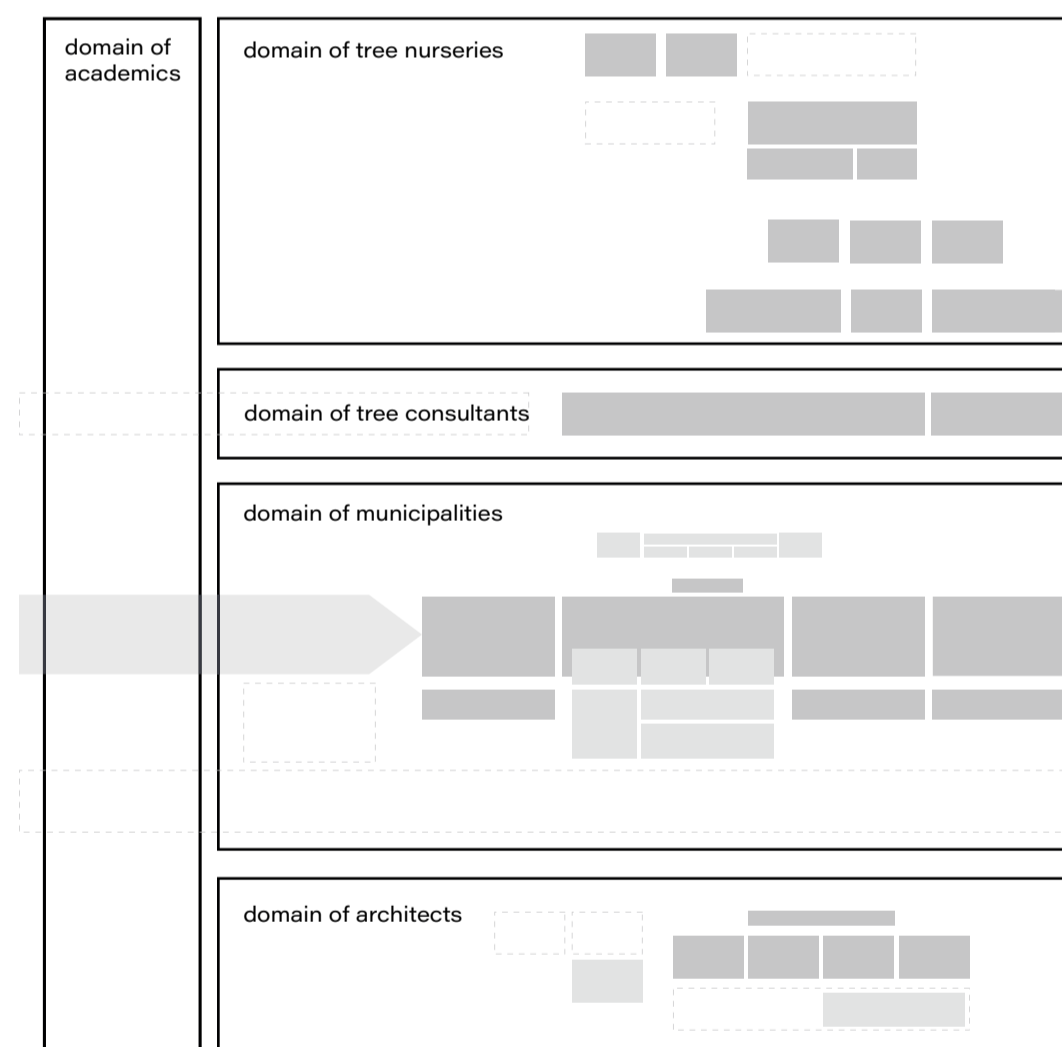
PART 4

the proposition
iterating speculative intervention



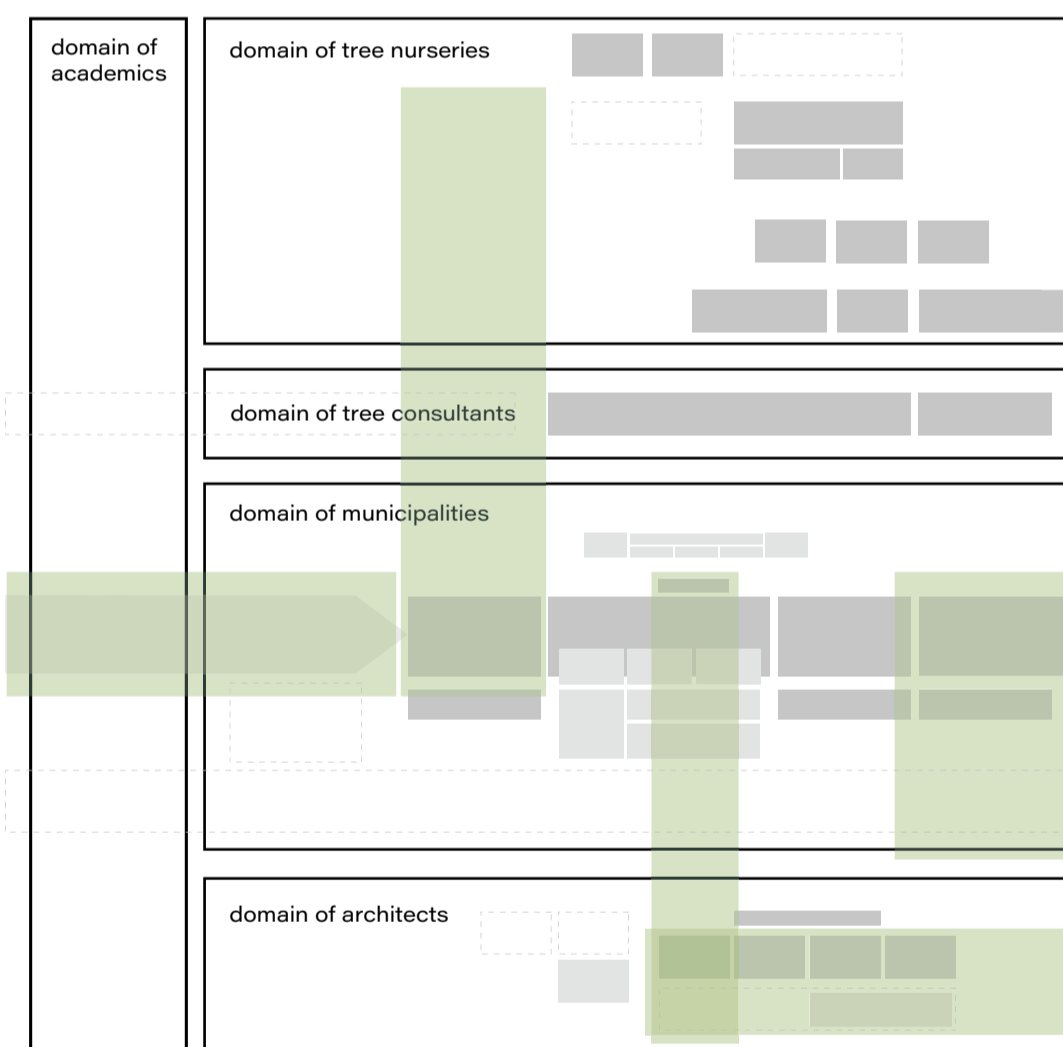
PART 5

the integration
operationalising the transitions



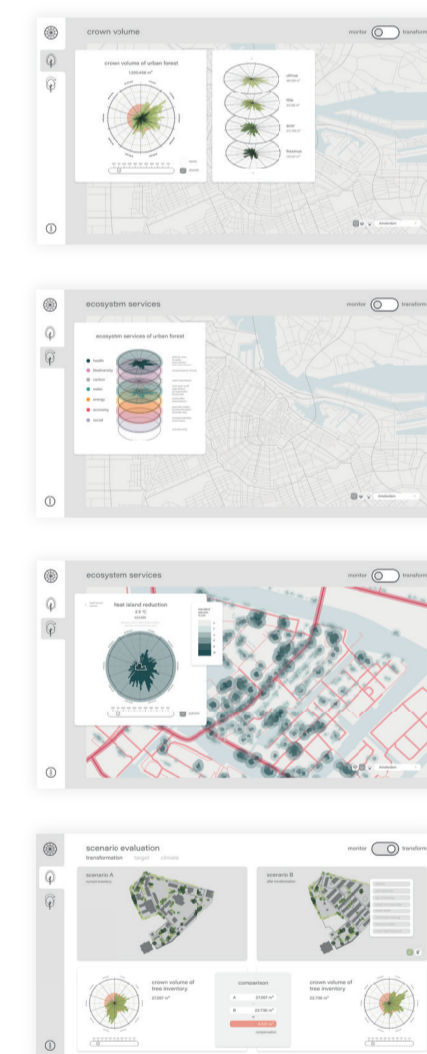
Public urban green process journey

The processes and interrelationships of the stakeholders in the consortium are mapped on the basis of 37 interviews in order to locate the role of the green sector in the urbanisation. The interviews with architects, municipalities and nurseries are analysed thematically in order to distill the most prominent tensions.



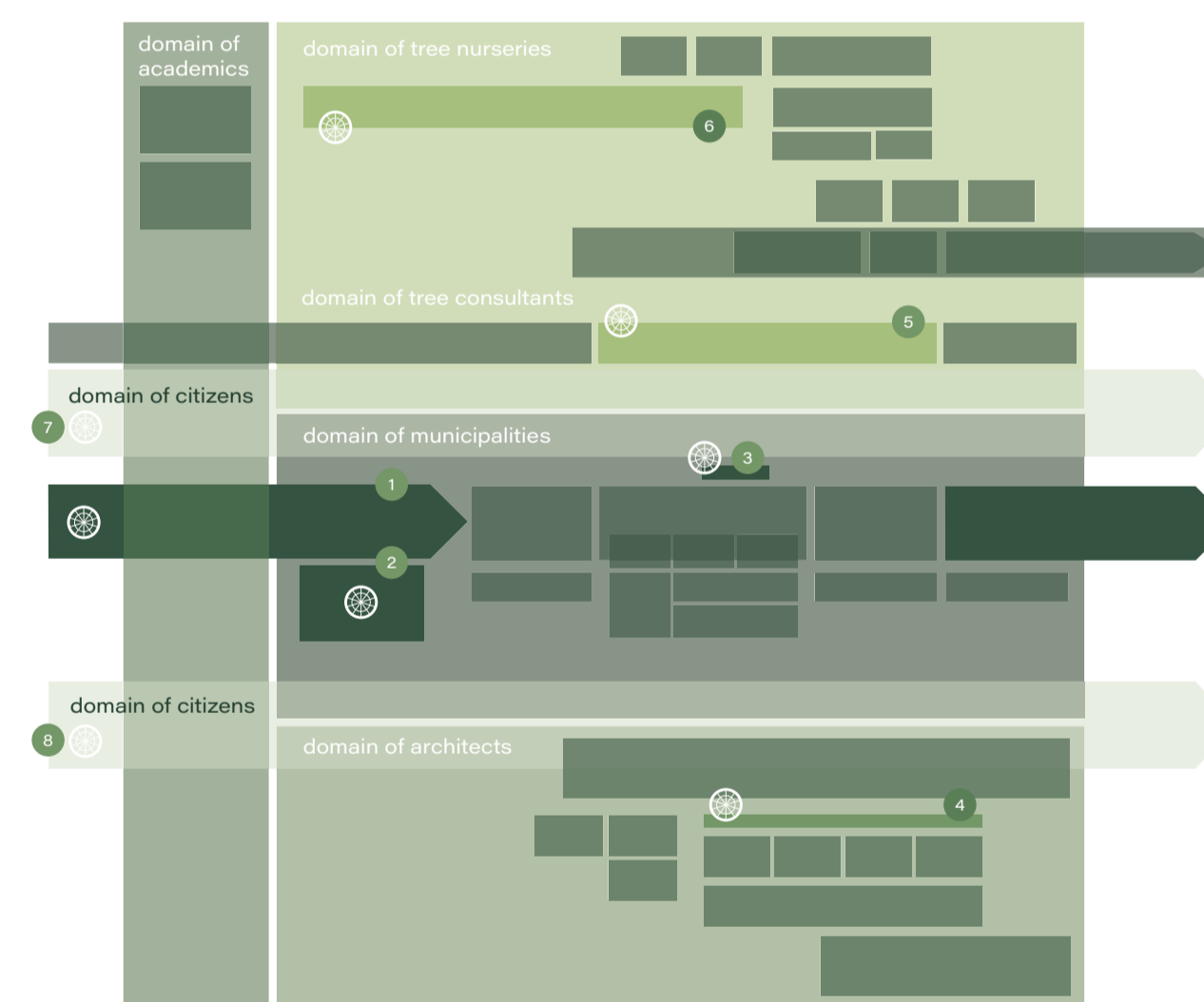
Opportunity areas for (re)connection

Two co-design sessions and a week of field trips are organised to explore opportunity areas for integration of i-Tree. Five opportunity areas are identified for (re)connecting the stakeholder domains: management dashboard, nursery inventory match, urban rules by design, green abstraction levels, and decision transparency



Urban Forest Portfolio

The management dashboard is tested and further iterated into the Urban Forest Portfolio, which evolves the use of i-Tree from static assessments to a dynamic portfolio. Five timelines for further development are proposed.



New practices and speculations

The potential impact of the proposition integration is explored, resulting in eight concrete practices enhancing the status quo together with six speculations on system scale. Part of the new paradigm is made tangible, operationalising the transitions by linking the principles of the new practices. Turning the lens to bring some of the abstract principles in focus.

- 1 communication to justify tree decisions to stakeholders
- 2 foundation for green policy and urban forestry masterplan
- 3 procurement framework for transformation projects
- 4 spatial input for design processes
- 5 element of tree effect analysis, tree valuation, and replacement policy
- 6 support long-term nursery contract
- 7 participatory urban green management
- 8 participatory urban green planning
- 9 shift in management rationale
- 10 move perceived 'climax' of transformation projects
- 11 enforce green infrastructure accountability
- 12 integrate green sector organisation
- 13 create a market for ecosystem services
- 14 establish green consortium, coalitions and Rijksgroenstaat

Sanne Keizer
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IDE Master Graduation Project
Strategic Product Design

Committee Dr. Rebecca Price (IDE)
Dr. René van der Velde (BK)
Company In collaboration
with i-Tree 2.0-NL consortium