WAGENINGEN
UNIVERSITY & RESEARCH

# CSI Trees: climate trees with future

WUR research team: Marc Ravesloot, Joukje Buitenveld, Garmt Dijksterhuis, Martin Goossen, Bert Heusinkveld, Jelle Hiemstra, Marco Hoffman (NAKT), Iris Kappers, Lydia Meesters, Karen de Rosa-Spierings, Gert-Jan Steeneveld

Consortium partners: Toon Ebben, Pieter van den Berk, Erik Fidder, Jeroen van Gaalen, Martin Houben, Peter Huis in 't Veld, Hans Kaljee, Nico Kelderhuis, Leendert Koudstaal, Jeroen van den Oever, Tony Pipping, Rudy Scheper, Leon Smet, Jan de Vries, Marcel Wenker & Jan Winter

| Work package | A | B | C | D | E | F | G |
|---|---|---|---|---|---|---|---|
| *Title work package* | **Physiological search profile for new climate-resilient urban trees** | **Retrospective and predictive LCZ maps urban area and linkage to climate zone classification** | **Effective international network to search for new genetic material** | **Perception of trees in the city** | **Updating winter hardiness zone maps** | **Measuring stress response of street trees for the development of a classification system for urban trees (fenotyping)** | **Nieuwe boomsoorten, rassen of zaadherkomsten in beeld brengen** |
| *Involved researchers* | **Iris Marc studenten** | **Bert** Gert Jan Marc | **Jelle** Marco Joukje Marc | **Martin** Karen Garmt Marc | **Gert Jan** Bert Marc Marco | **Marc** Lydia Iris Rick | **Jelle** Marc Marco |
| *Period* | **2022** | **2022 en 2023** | **2022** | **2022** | **2022** | **2022 pilot 2023 evaluatie opschalen 2023 en verder** | **2023 en vervolgjaren** |
| *Research type* | **Literature study** | **modeling & mapping** | **deskwork** | **qualitative research** | **modelng & mapping** | **controlled glasshouse trials** | **deskwork** |
| *WUR institutes involved* | **Chair group of plant physiology AGRO** | **WU chair group metereology en airquality AGRO** | **OC NAKT WENR AGRO** | **WENR FBR AGRO** | **WU chair group metereology & airquality AGRO NAKT** | **AGRO FBR Chair group of plant physiology NPEC** | **NAKT AGRO OC** |
| *Result* | A4 sheet containing very sharply the physiological and morphological characteristics of future street trees | Refined LCZ maps of Dutch cities are linked to biome (natural dispersal areas) The maps, by integration with light availability etc, lead to stand suitability classification | Database of institutes in the countries with interesting biomes | Picture of citizens' perception and characteristics of trees, collected in the 10 participating municipalities. Also a proven method for future knowledge questions in the field of perception. | New maps with winter hardiness zones if possible linked to winter hardiness list | Development of a measurement line to eventually classify and ordinate all tree species based on stress response (e.g., drought stress, salt stress, heat stress...) | New genetic plant material searched and imported based on physiological search profile. To be validated in measurement line |
| *Scope/Delimitation* | This component will be completed in 2022. It will then be used for the work package | 10 participating Dutch cities | Worldwide | 10 participating Dutch cities | Europe | Within the scope of this 2-year project, the method will be developed. If proven to add value, the project will be extended to examine the entire city tree stock. | This component starts in 2023 and will require continued attention in follow-up research |
| *Degree of risk* | low | low | low | low | average, whether this can also be made interactive is still an open question | low | high, depending on political mandate from countries, finding native speakers, strength existing network |
| *Value/use/outcome* | Offered in several languages to stakeholders to visualize new genetic material | Local climate maps are linked to the climate zone where material should be sought | This database is used to contact institutes for the search of new genetic material | Knowing how green is experienced also sharpens the search profile. Between these two there is a relationship | New maps of winter hardiness zones linked to winter hardiness list | Toward a measured, empirically determined tree classification system based on stress response under controlled conditions. | New revenue models for the tree nursery industry. |
| *Relations between work packages* | A+D= demand-driven search profile to be used in G | B provides insight for A | C constitutes necessary preparation for G | D gives spatial insight for A | E provides insight for A | F has no direct dependency relationship with other work package. | Next step for climate-resilient trees and right trees for Dutch and European cities. |
| *Communication* | used only internally for communication with institutions worldwide | made available digitally via public WUR websites, standards institute and journal article | no external communication | journal article and lectures on request | journal article & assurance via public WUR sites and standards institute trees | journal article / scientific article | new material is brought into the picture of the participating tree growers. They discuss the market introduction among themselves with legal support from the WUR |

Wageningen University & Research
Droevendaalsesteeg 1 NL-6708 PB
Wageningen
Contact: marc.ravesloot@wur.nl
M +31 (0)6 221 933 12
www.wur.nl