T-Lab4
LAND Research Lab

/T-FACTOR

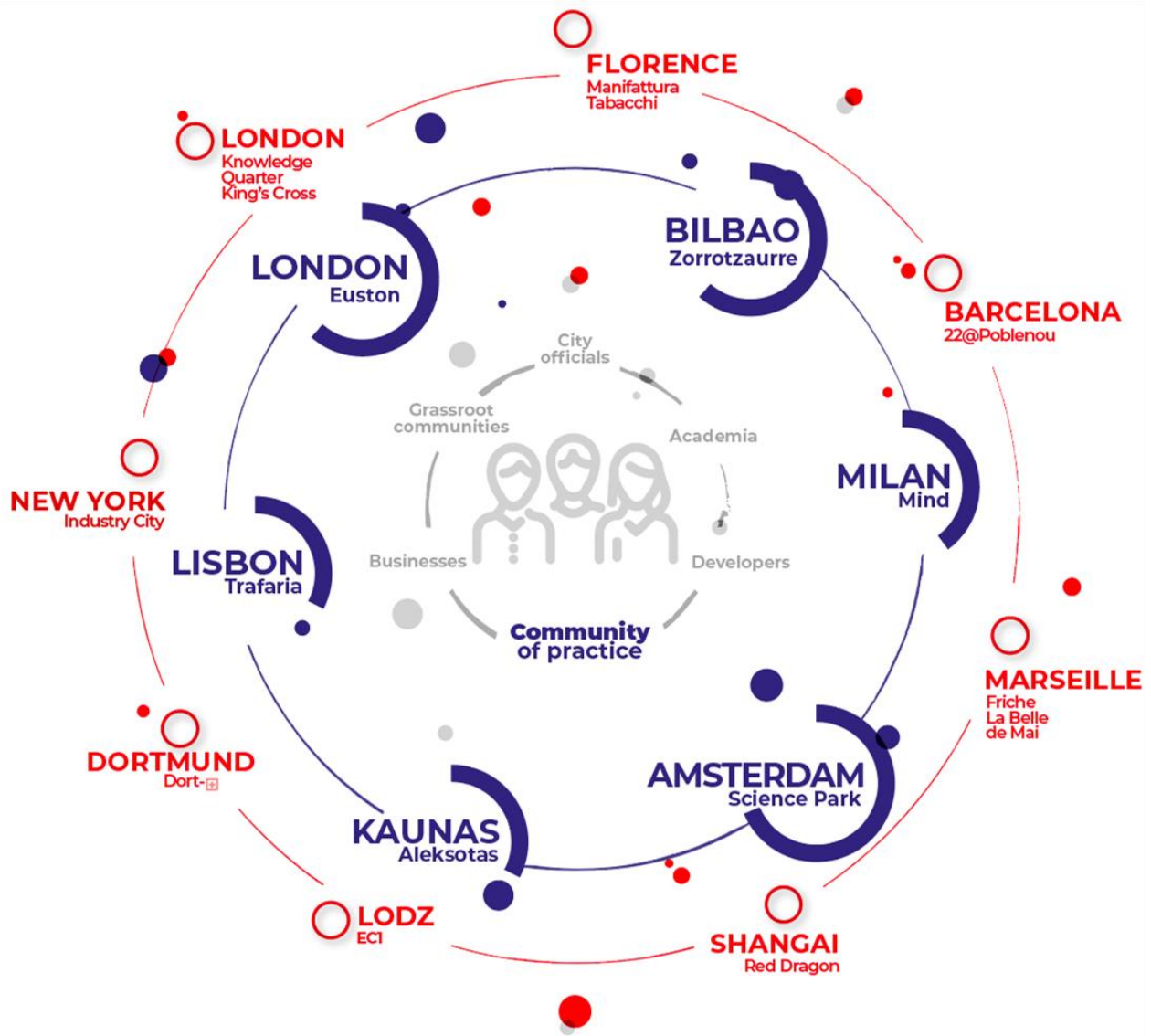
DEEP DIVE WORKSHOP

Animal-oriented design at Amsterdam Science Park

22 June 2022

T-FACTOR HAS RECEIVED FUNDING UNDER HORIZON 2020 RESEARCH & INNOVATION PROGRAMME WITH GRANT AGREEMENT NO. 868887

Our cities: Advanced cases and Pilot projects



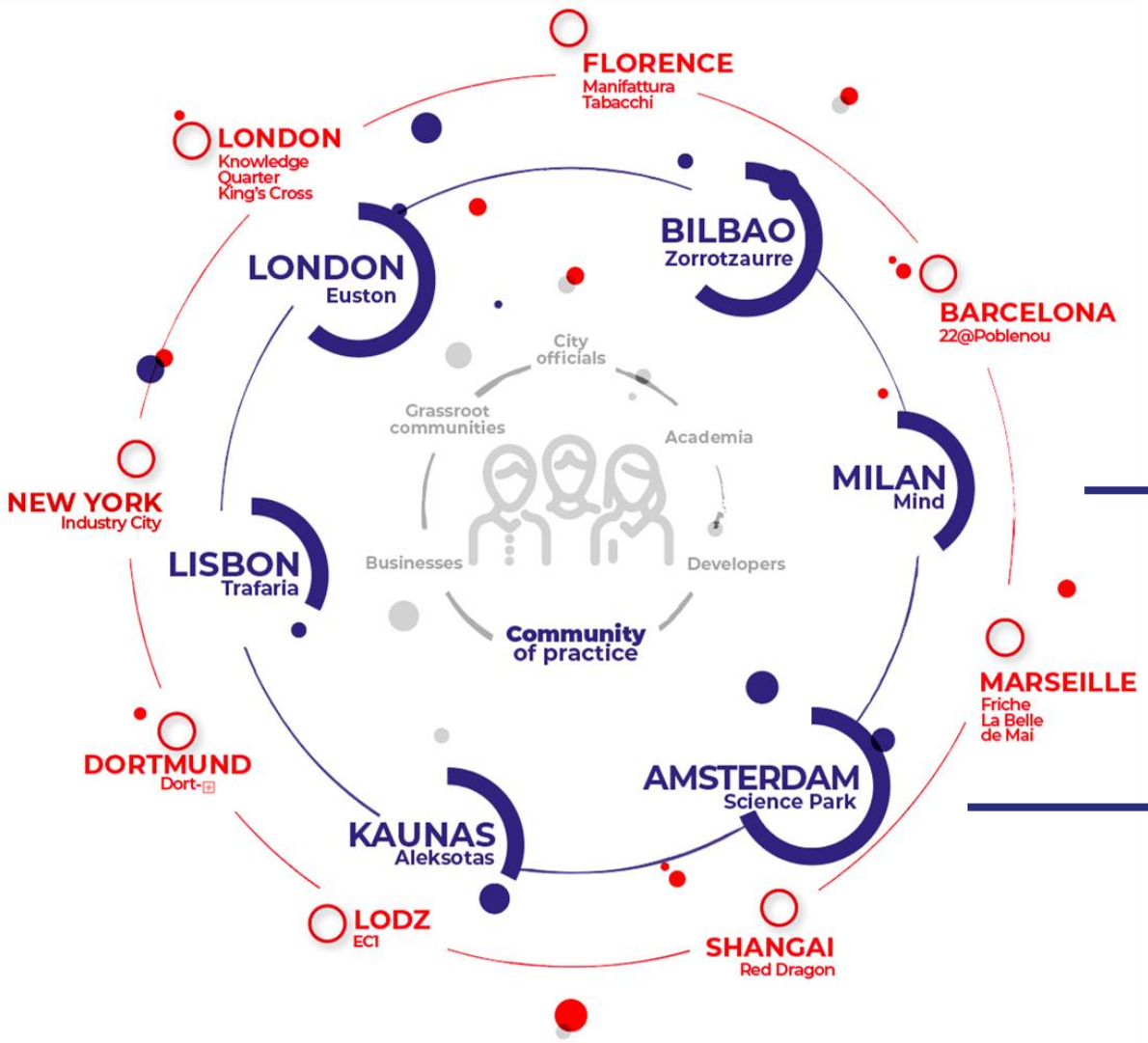
T-Labs

In T-Factor, the so-called Transformation Labs (T-Labs) embody the living knowledge that supports pilots in their exploration and delivery of place-based missions of innovation in the meanwhile. Spanning multiple thematics the T-Labs re the fundamental engine through which we aim to transform the trajectory of masterplans towards higher ambitions of sustainable, inclusive and thriving urban regeneration.

In the project, there are 7 T-Labs, namely:

- T-Lab 1 - Arts, Culture & Creativity
- T-Lab 2 - Urban Production and Digitalisation
- T-Lab 3 - Citizens-led Smartness
- **T-Lab 4 - Urban Design for Sociality and Wellbeing (LRL leading)**
- T-Lab 5 - Circular and Collaborative Economy
- T-Lab 6 - Social Innovation and Social Inclusion
- T-Lab 7 - Megacities and Climate Change

T-Probes: anticipating the meanwhile



May 2021
Exploration

Sept 2021
Walkshop

LAND

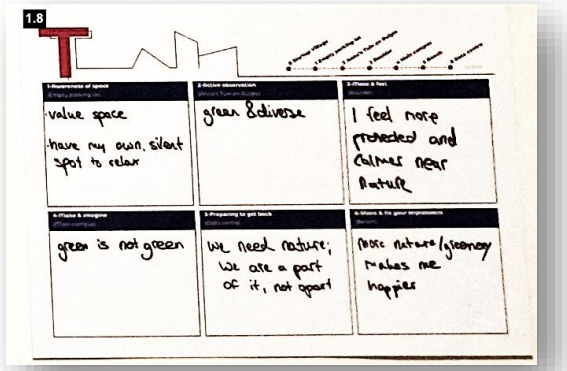
Sept 2021
Ecology of attention

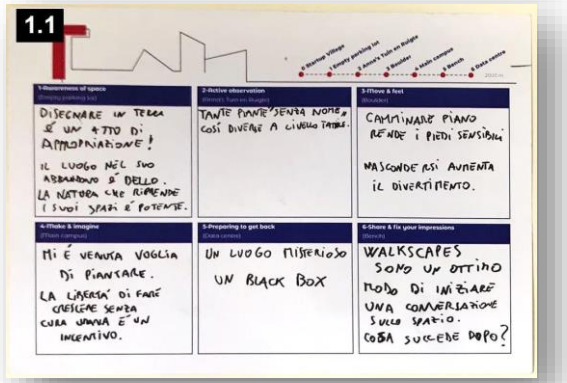
LAND Futuribile

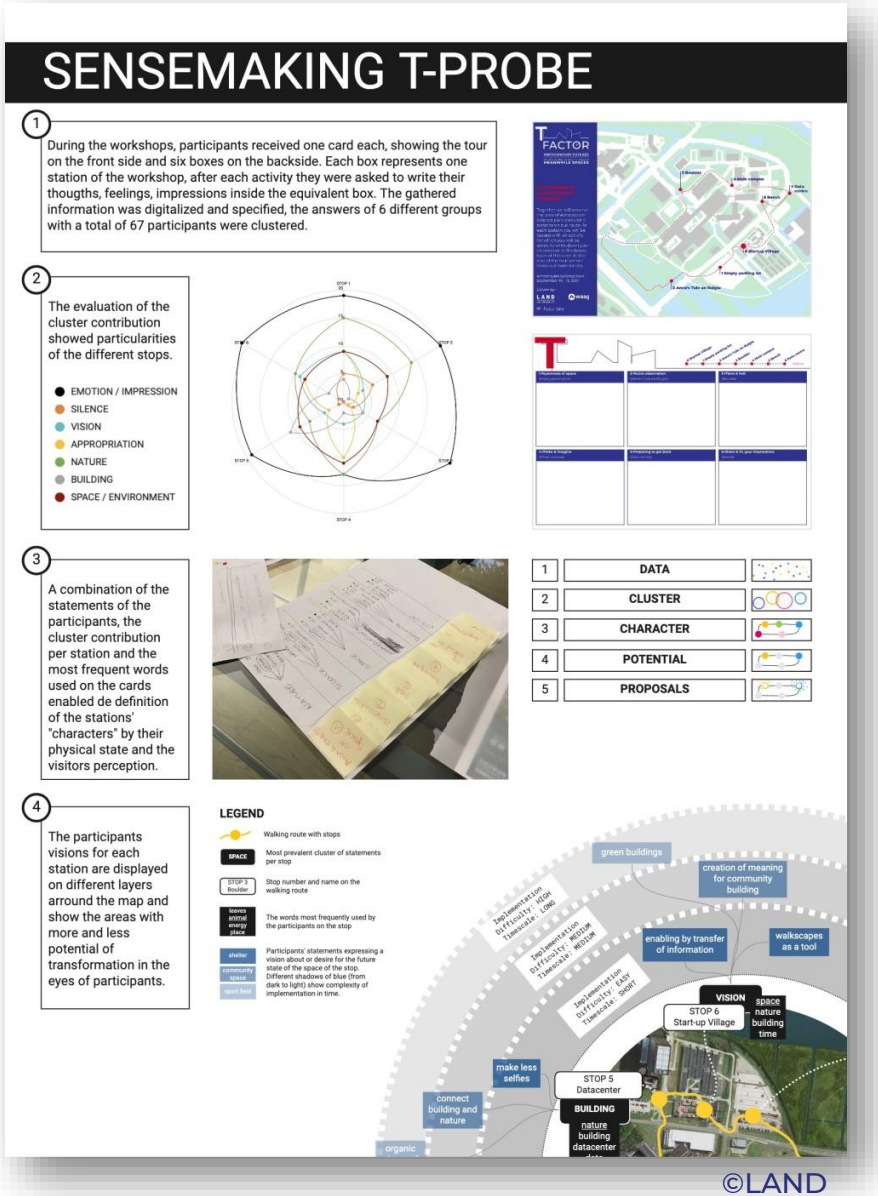
July 2021
Exploration

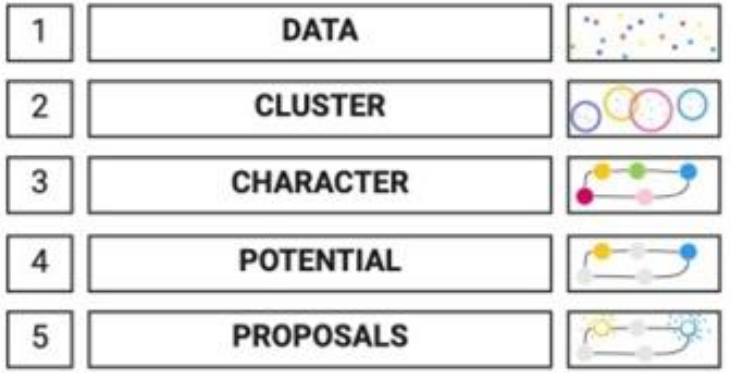
Participatory approach: emotional mapping

Sensemaking



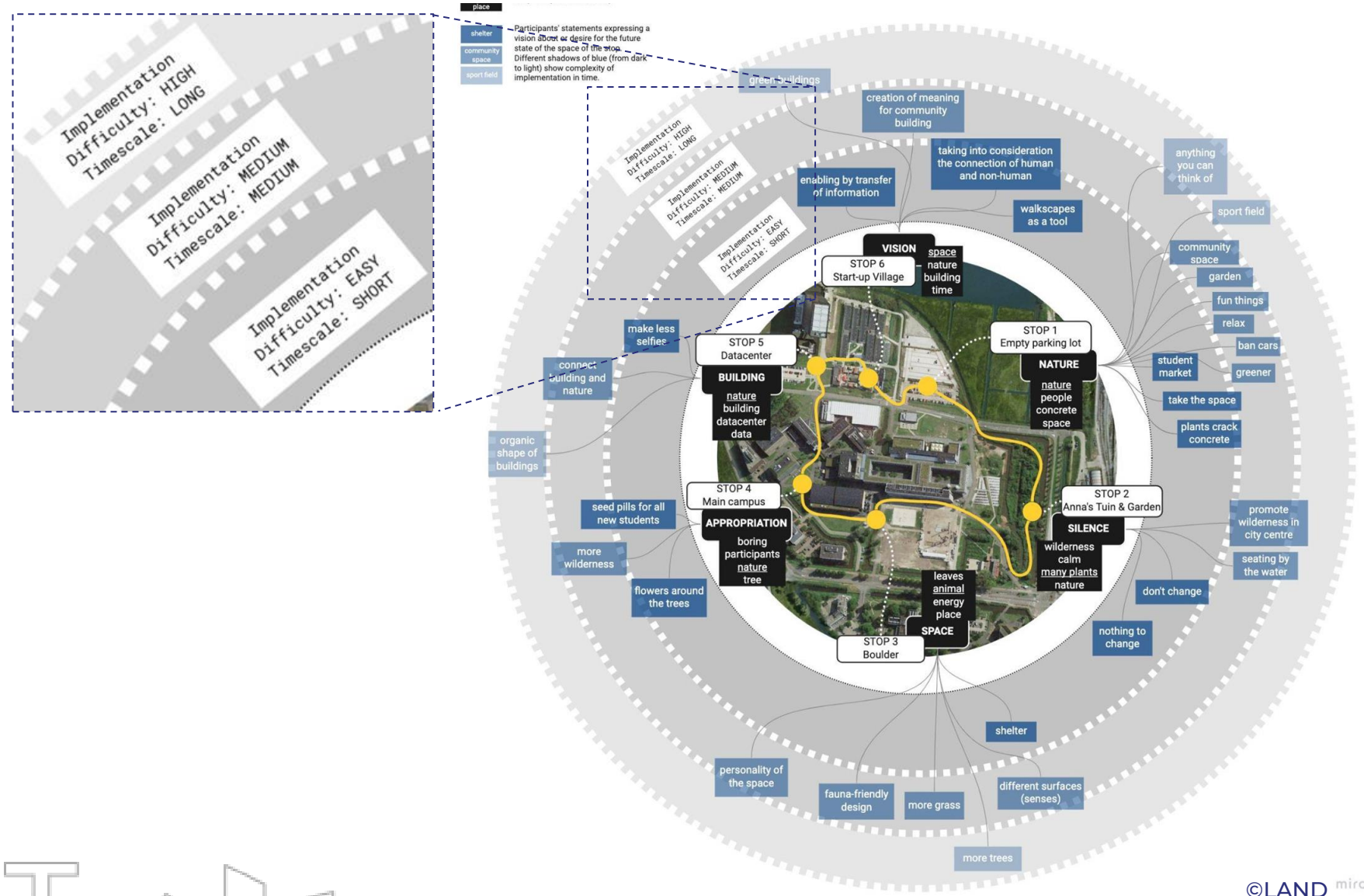






©LAND

Towards mental maps: Placemaking compass

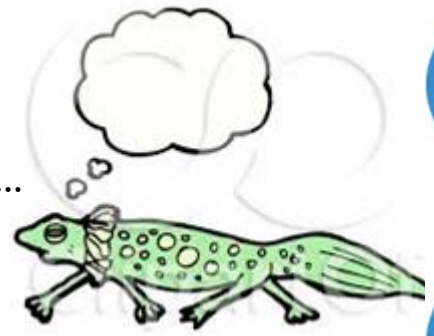


©LAND miro

Methodological approach

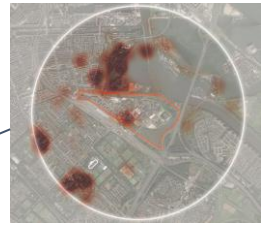
To design open green spaces in urban environment…

…we should think as animals

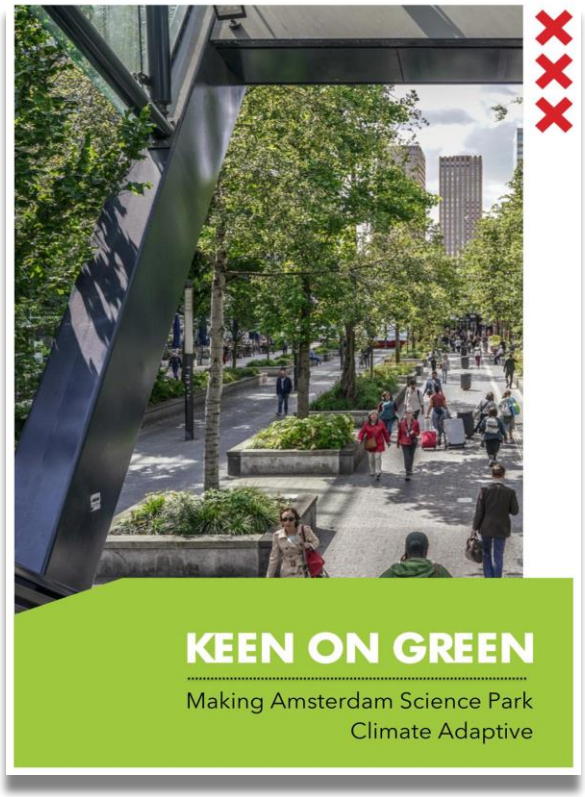


But before that…we proceeded on a “human” basis of information at **different scales**

- Desk research/City scale: City’s urban ecology strategy
- Onsite/Local scale: Participatory walkshop - onsite proofing with citizens
- Deskresearch/City and local scale: Mapping Biodiversity with Inaturalist (citizen science)
- Deskresearch and online exchange: Local study by city ecologist on ASP area **to define target species**
- Set goals based on target species
- **Choose solutions fitting to chosen goals**



From urban to local



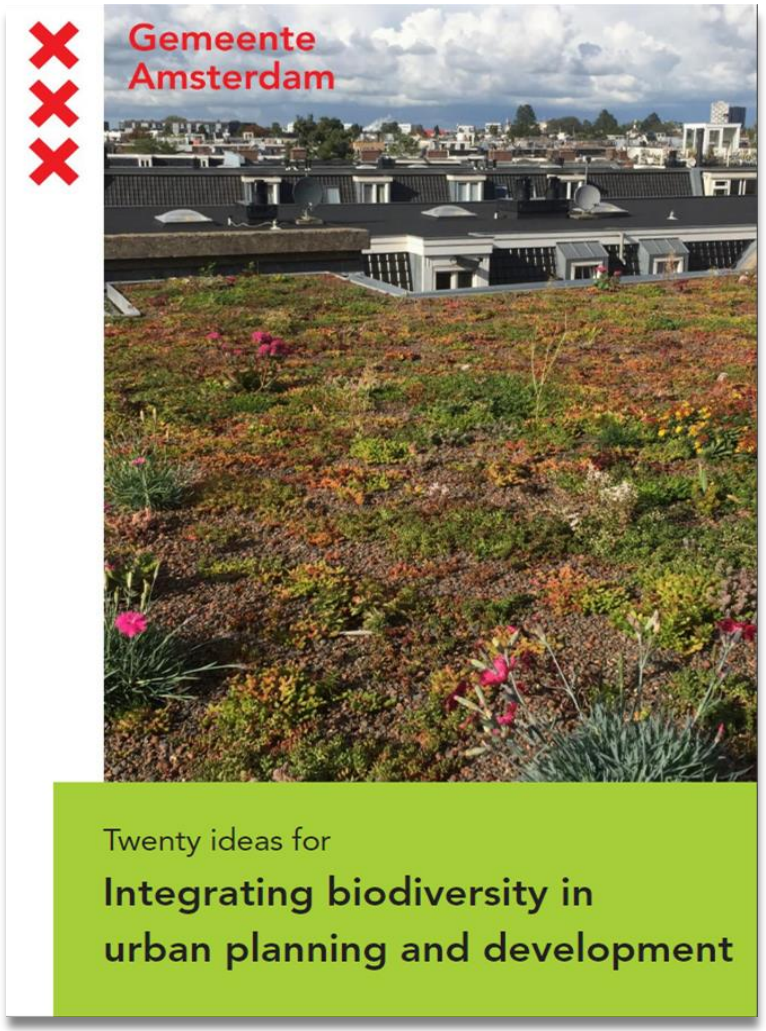
AMSTERDAM SCIENCE PARK

Amsterdam Science Park

natuurinclusief

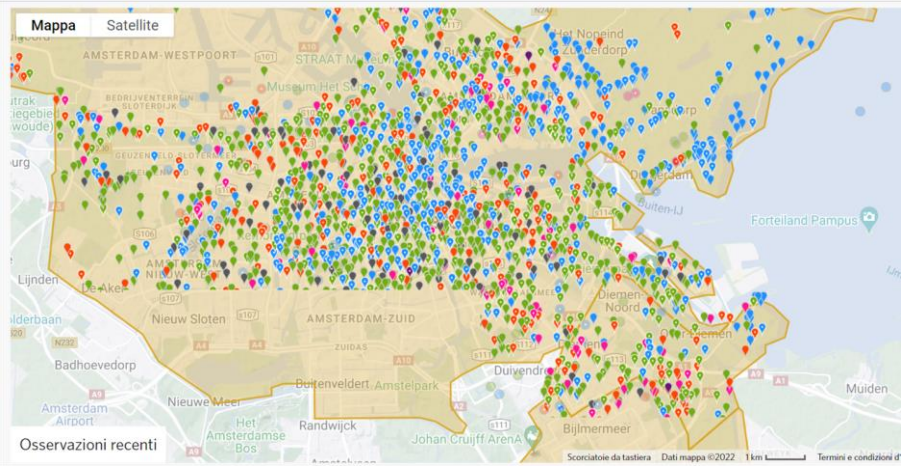
klimaatadaptief

From policy to practice



Comparing sources

Combining Expert monitoring with citizen science

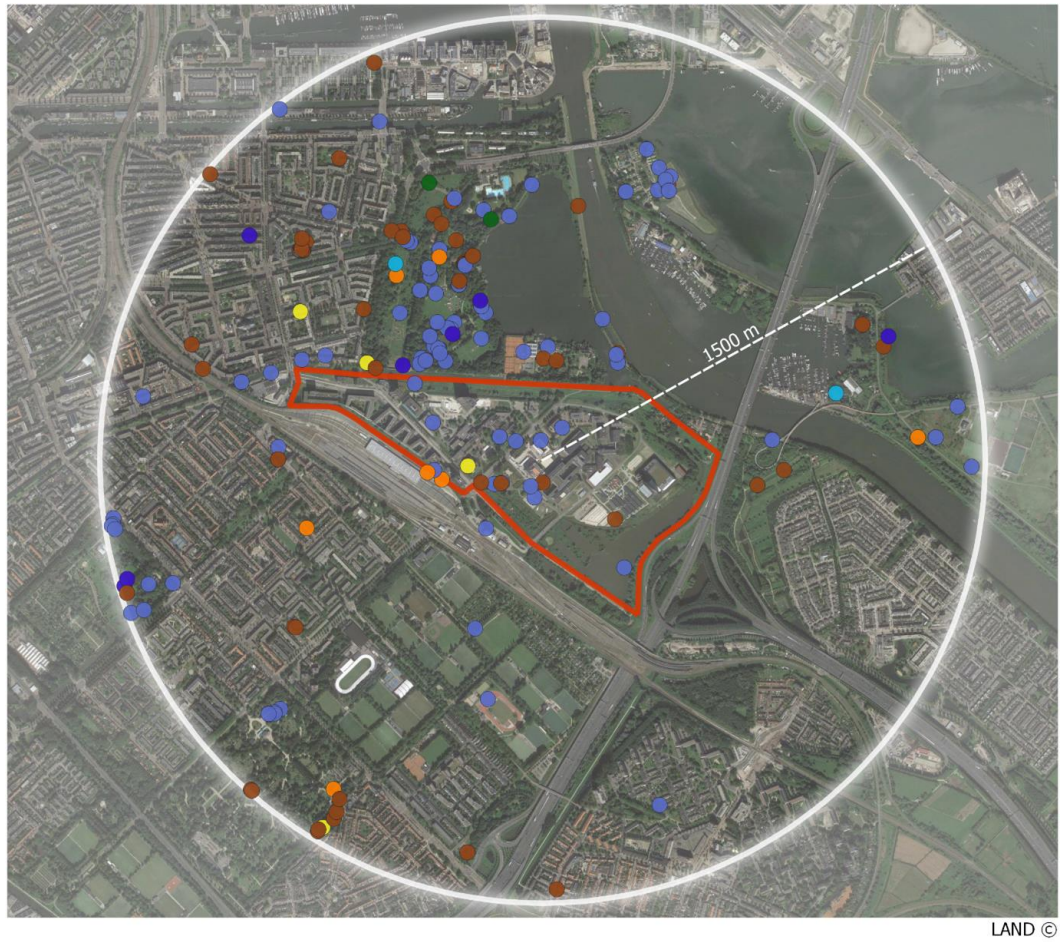


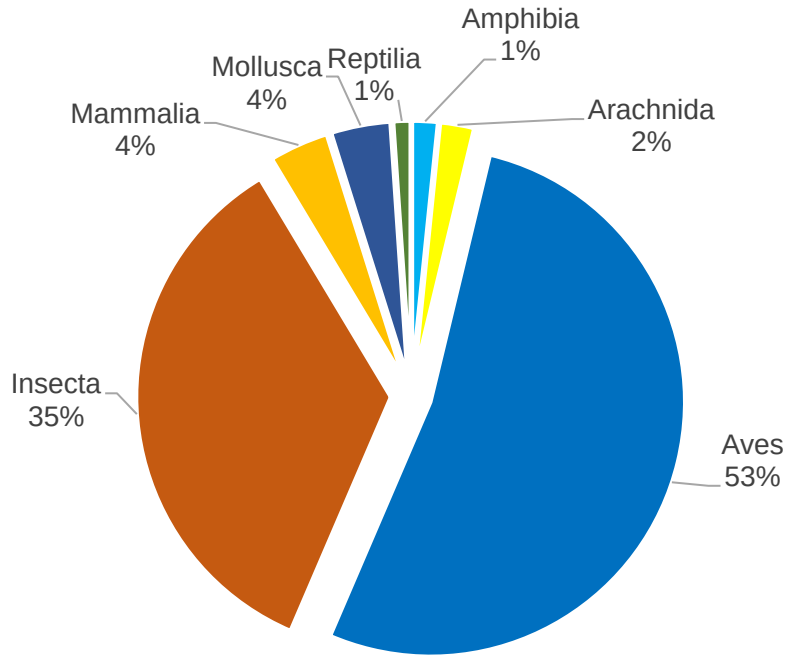
iNaturalist

Kansenkaart ecologie met doelsoorten

Amsterdam Sc

Wildlife observations around ASP area



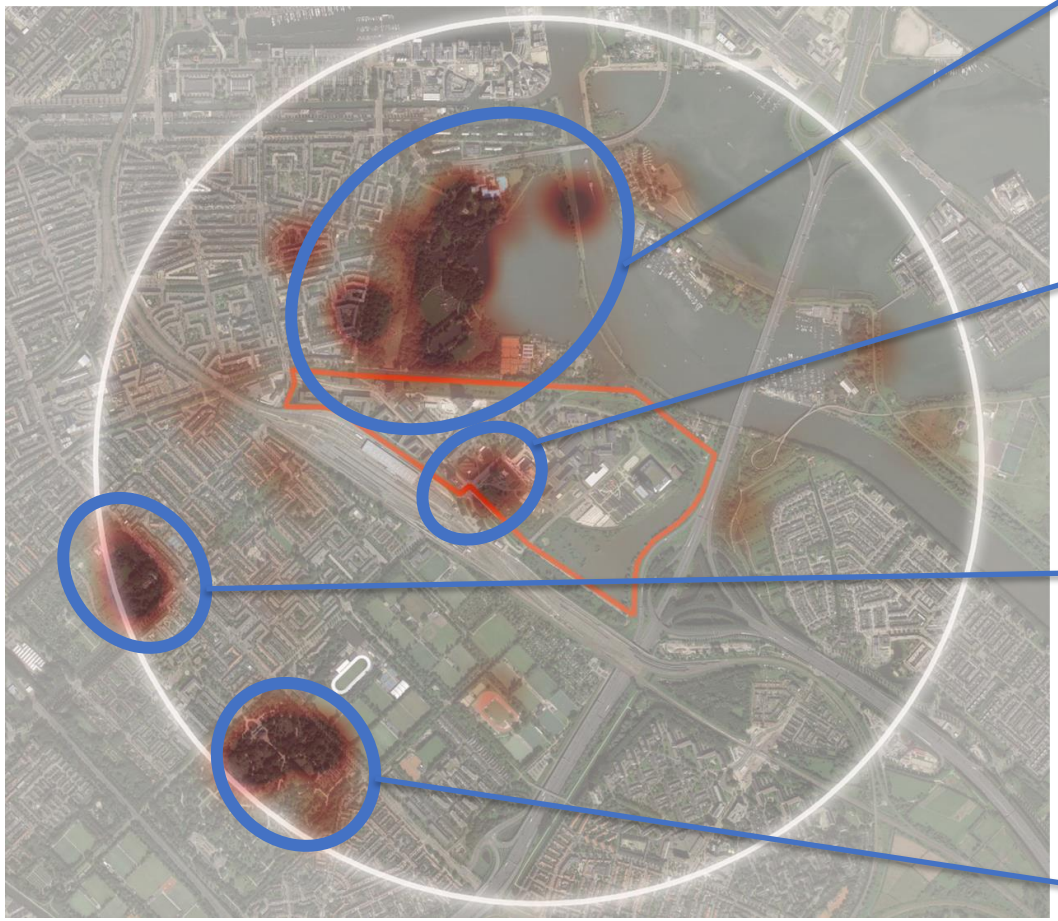


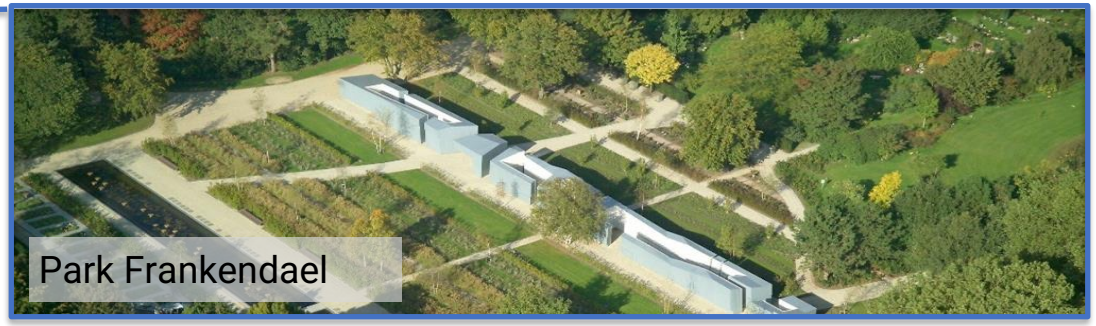
Wildlife taxonomic classes featured:

- Amphibia: 3 observations
- Arachnida: 4 observations
- Aves: 98 observations
- Insecta: 65 observations
- Mammalia: 7 observations
- Mollusca: 7 observations
- Reptilia: 2 observations

Total: **186 observations** in the buffer area

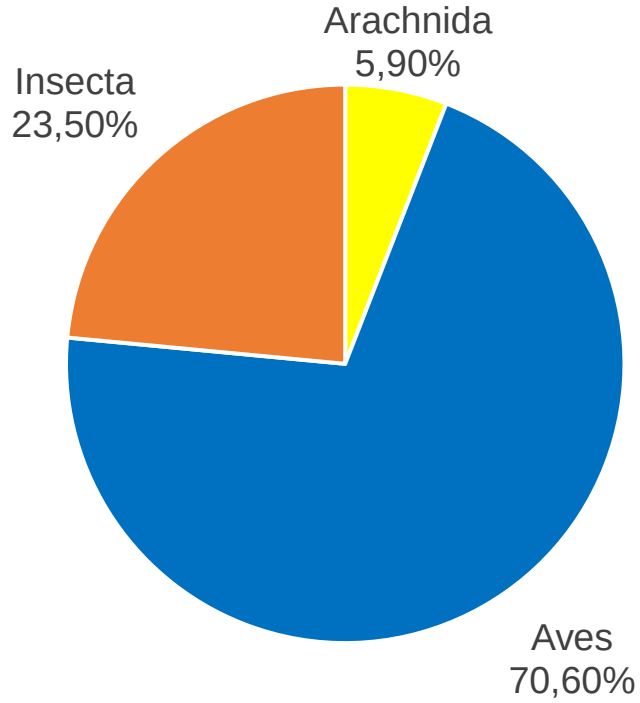
The value of urban parks





Wildlife observations are mostly distributed around urban green areas. This indicator allows to assess the environmental quality and suitability for non-human users of green spaces. Citizen science observations also provide useful information about accesibility and frequentation of urban parks.

Focus on wildlife observations

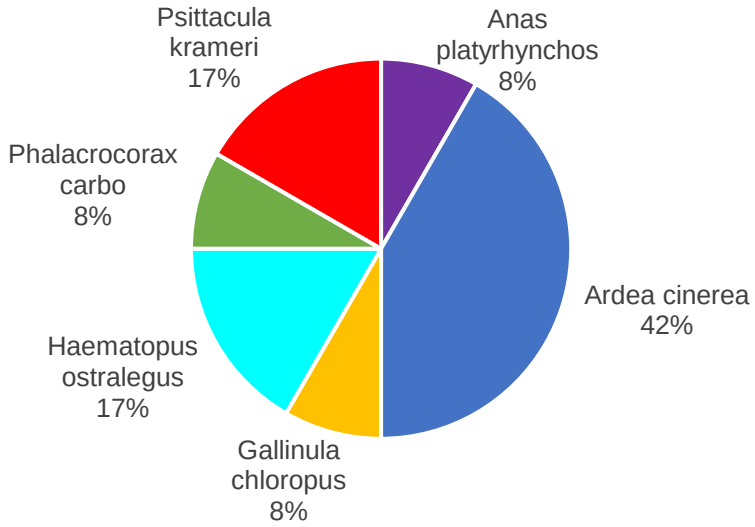


Wildlife taxonomic classes featured:

- Arachnida: 1 observation
- Aves: 12 observations
- Insecta: 4 observations

Total: 17 observations in the area

Wild birds inside ASP



Mallard

Grey heron

Common moorhen

Eurasian Oystercatcher

Great cormorant

Rose-ringed parakeet

Species portraits: mammals

The hazel dormouse

Moscardinus avellanarius

Description: small mammal native to Europe and Asia. It can reach the lenght of 15 cm including its tail and it is a nocturnal creature. It hibernates from October to April-May

Habitat: Hazel dormouse is particularly associated with decidous woodlands but also inhabit hedgerows and scrub. The nests are located on the ground, under piles of leaves or logs or in the base of old trees.

Critical site factors: presence of suitable nesting conditions (log piles, old trees), presence of food (berries, nuts but also young leaves and flowers or insects as aphids and caterpillars). Management of green spaces during winter hibernation can disturb these rodents.

Predators: raptors, foxes and domestic cats.

Curiosities: the hazel dormouse spends most of its life sleeping; when not, it stays among the branches looking for food. These creatures love hazelnuts.

Common noctule

AS P

Nyctalus noctula

Description: migrating and insectivorous, this bat species is common throughout Europe and Asia. They have a wingspan of about 40 cm and they spend the winter hibernating.

Habitat: the common noctule prefers small-sized woodlands, but can forage up to 20 km away at night. It can also live in built-up areas and artificial nests.

Critical site factors: presence of suitable nesting conditions (old trees cavities or abandoned buildings), presence of food (mainly insects as beetles, moths and winged ants). Management of dead wood in green species during winter hibernation can disturb these bats.

Predators: raptors, domestic cats, snakes

Curiosities: only females are migrating, males not. Sometimes summer territories and hibernating places are hundreds of kilometres apartThey can eat up to 3000 insects per night, providing natural defense against pests and mosquitoes.

Solutions to build and add to your space:

The destruction of habitats is amongst one of the main causes of fauna species loss in today's world. Human settlements and development are intricately related to habitat destruction. Habitat loss is an important risk not only for the fauna species dependent on said habitat, but it also can be a nuisance for human health *(Wageningen University , 2011)*.
In a world that is increasingly at risk and compromised by increasingly cumbersome threats, it is important to focus on what can be done, immediately intervening on the resources available to combat these events. The loss of biodiversity is a phenomenon now established and studied by many researchers, on a large scale and for this reason in the following portfolio we will focus on the most 'concrete', quick and easy actions to improve the condition of our natural environment on a small scale.





1. Bug-hotel
2. Birds house - © NABU
3. Benjes hedge - © Muenzl
4. Amphibians house - © RSPB
5. Shitake in trunk - © Wurth

Solutions to manage and adapt your space:

For cities, the design of 'green infrastructures' and the implementation of 'nature-based solutions' have been proposed to maintain the important ecosystem services and to protect a healthy level of biodiversity. Biodiversity is declining worldwide and human land use is the major driver of this decline.
Biodiversity plays an important role in the emerging challenges and extreme events as results of climate change. Everyday it is getting more urgent to act with adapting solutions and new interventions to the existing assets of our cities, that have to be easy and quickly replicable. The key challenge of our time is precisely here, to act now and immediately. Vulnerability to climate change can be exacerbated by other stresses, including the loss of biodiversity, damage to ecosystem services, and land degradation. Adaptation will become an increasingly important part of the development agenda. Enhanced protection and more sustainable management of natural resources (The World Bank, 2008).





6. Pollinator hedges
7. Sand on green roof - © Sempergreen
8. Green space management - © NatureScot
9. Water pond - © RSPB
10. Worm supporting solutions- © Sweetser

AID1 Bug hotel

What? Creation of shelter for different bug species
Why? To provide a safe hideaway for wildlife and help make use of garden waste.
When? Optimal to be constructed in every period of the year, in Autumn some materials can be found easier such as straw, dry grass and hollow plant stems.

How?
1. Take the fruit box or alternatively the wooden planks and assemble as if they were a box, leaving one side completely open
2. Create separate areas always using wooden planks as a divider, so as to create separate micro-areas for each species
3. Fill in the structure with the elements reported below 'What to put inside'.
4. Glue over the entire surface of the box if you want a net so that the material inside does not fall
5. Place the structure upright in a sunny and sheltered area from the wind, possibly close to aromatic plants. *(Source: LipuVarese, 2020)*

What to put inside?
Dead wood and loose bark for beetles, centipedes and spiders;
Bamboo reeds for solitary bees and bumblebees
Larger holes with stones and tiles, which provide the cool, damp conditions frogs and toads like – if you put it in the centre you'll give them a frost-free place to spend the winter;
Dry leaves, sticks or straw for ladybirds and other beetles and bugs;
Corrugated cardboard, straw and wood for lacewings.

Curiosities
Animal pollination is the fundamental basis for the functioning of ecosystems, the conservation of habitats and benefits for humans, including the production of food, fibers, wood and other products What are the good insects? These are harmful insects, greedy for harmful insects, they help us in preventing plant diseases of useful to parasites, or allies because they are faithful pollinators *(LipuVarese, 2020).* Ladybirds and Lacewings' larvae for instance, eat aphids, a pests very dangerous for plants.

AID6 Pollinator hedges

What? Pollinator hedges are flower buffer bands for increasing biodiversity in agricultural environments and environmental restoration in natural areas.
Why? the aim is to host useful and pollinating insects that ensure the productivity of crops and the natural pest control and pollination.A study from the Ecology Letter states that flower strips are more effective at promoting natural pest control, while older and more diverse hedges are more effective at promoting pollination *(SINAB, n.d).*

How?
1. Choose a place, preferably facing South with good sunshine throughout the day, but at the same time protected from the wind.
2. Treat the soil with garden tools to prepare it for planting or get some wooden boxes or pots.
3. Choose the plants to use, the native ones and the spontaneous ones are preferable because they require little maintenance. Also use plants with scalar flowering (lavender, thyme, rosemary, camellias, azaleas and others) so as to have flowers every season and to guarantee constant nourishment to insects. Alternatively, plant the seeds of the plants directly.
4. Provide containers with water (including rainwater) for nearby insects.
5. Keep the flowering band clened from weeds.

(Source: Codiferro, n.d)

Curiosities
Many of the flowering plants we know need pollinating insects to survive. Thanks to them, pollination and subsequent reproduction takes place. About one in three bites of the food we eat every day, we get it thanks to pollinators. Furthermore, these small insects keep healthy ecosystems alive capable of cleaning the air, stabilizing the soil, protecting from environmental disasters and safeguarding wild animals. Many of the pollinating insect species are diinishing due to the loss of their natural habitats and the disappearance of the food they eat. Air and soil pollution, the abuse of chemicals, some diseases and changes in climate patterns, all contribute to the decrease and displacement of pollinating insects *(Codiferro, n.d).*

t-factor.eu

T-FACTOR HAS RECEIVED FUNDING UNDER HORIZON 2020
RESEARCH & INNOVATION PROGRAMME WITH GRANT AGREEMENT NO. 868887