LAND
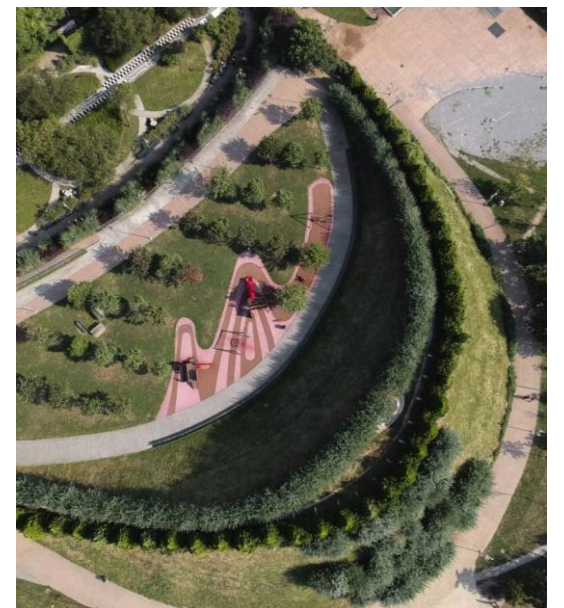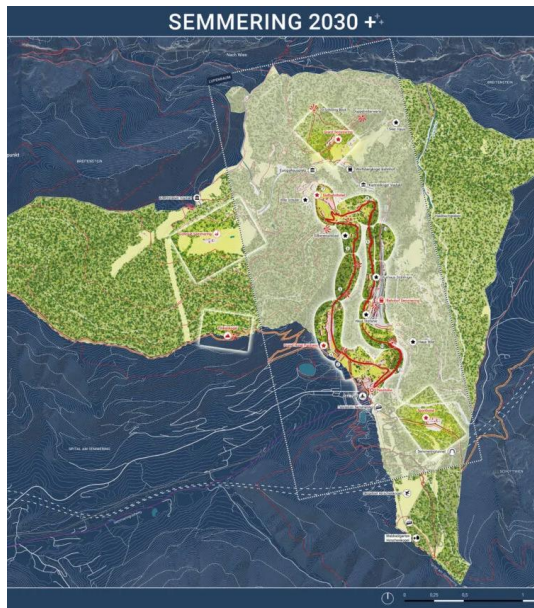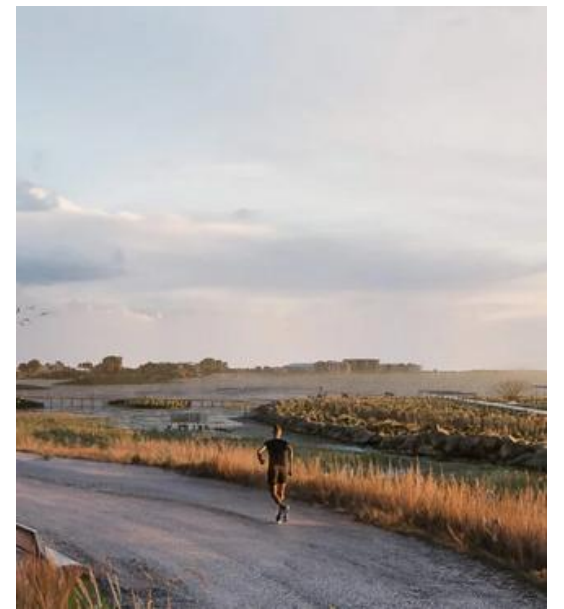#### LANDSCAPE ARCHITECTURE NATURE DEVELOPMENT
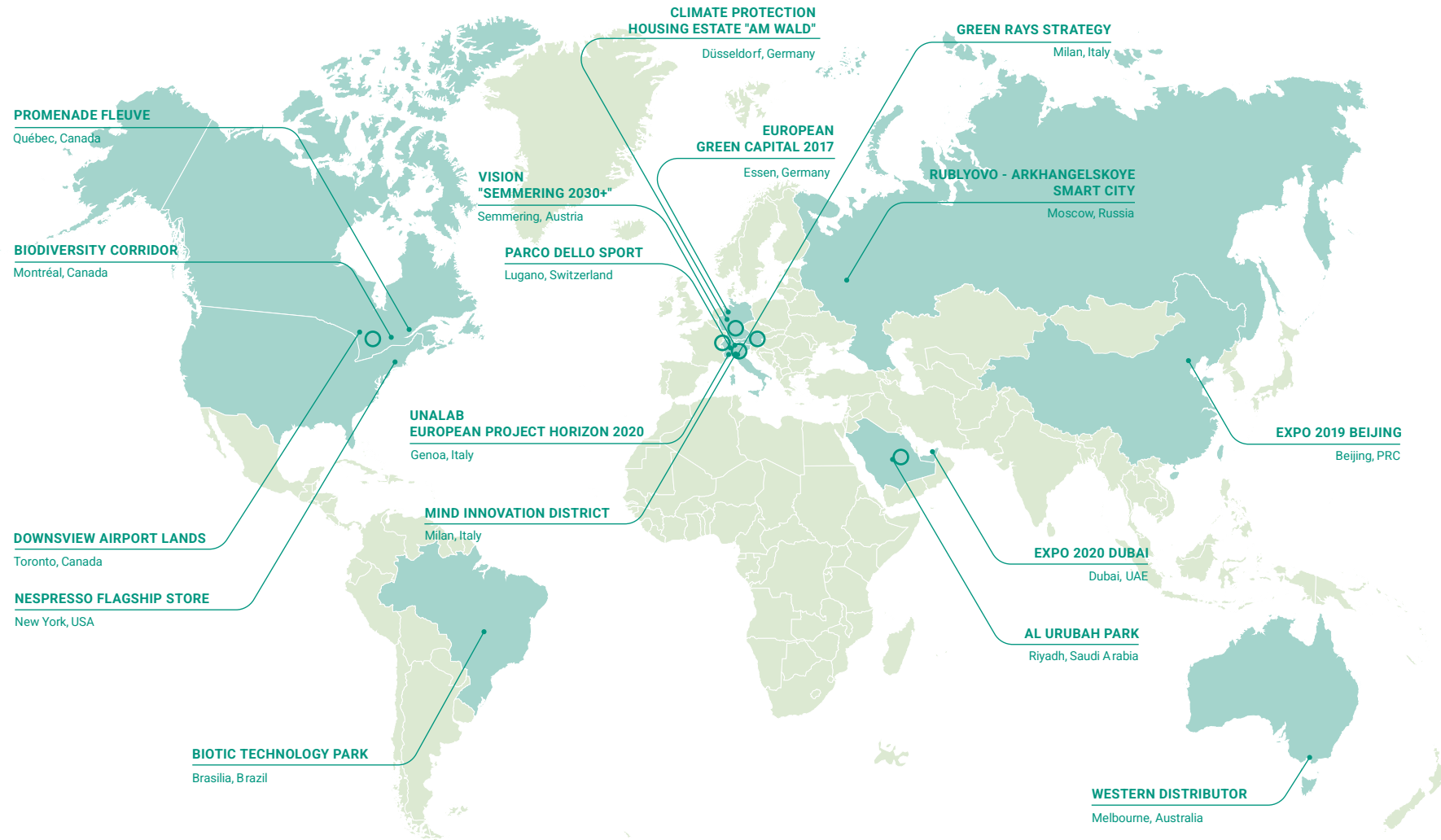
nAIture landscape modelling

LAND Top-player for Business Meets Innovation

October 21st 2025, Turin

Creating liveable places all around us

CLIMATE PROTECTION HOUSING ESTATE "AM WALD"
Düsseldorf, Germany

GREEN RAYS STRATEGY
Milan, Italy

PROMENADE FLEUVE
Québec, Canada

EUROPEAN GREEN CAPITAL 2017
Essen, Germany

VISION "SEMMERING 2030+"
Semmering, Austria

RUBLYOVO - ARKHANGELSKOYE SMART CITY
Moscow, Russia

BIODIVERSITY CORRIDOR
Montréal, Canada

PARCO DELLO SPORT
Lugano, Switzerland

UNALAB EUROPEAN PROJECT HORIZON 2020
Genoa, Italy

EXPO 2019 BEIJING
Beijing, PRC

DOWNSVIEW AIRPORT LANDS
Toronto, Canada

MIND INNOVATION DISTRICT
Milan, Italy

EXPO 2020 DUBAI
Dubai, UAE

NESPRESSO FLAGSHIP STORE
New York, USA

AL URUBAH PARK
Riyadh, Saudi Arabia

BIOTIC TECHNOLOGY PARK
Brasilia, Brazil

WESTERN DISTRIBUTOR
Melbourne, Australia

OFFICES

- Düsseldorf (DE)
- Lugano (CH)
- Milan (IT)
- Riyadh (KSA)
- Toronto (CA)
- Vienna (AT)

- SELECTED PROJECTS

NATURE
We cultivate resilience

LANDSCAPE
We work at every scale

LAND

ARCHITECTURE
We create space for people

DEVELOPMENT
We strive for a sustainable development

Sustainability is an opportunity for Business & Innovation

6

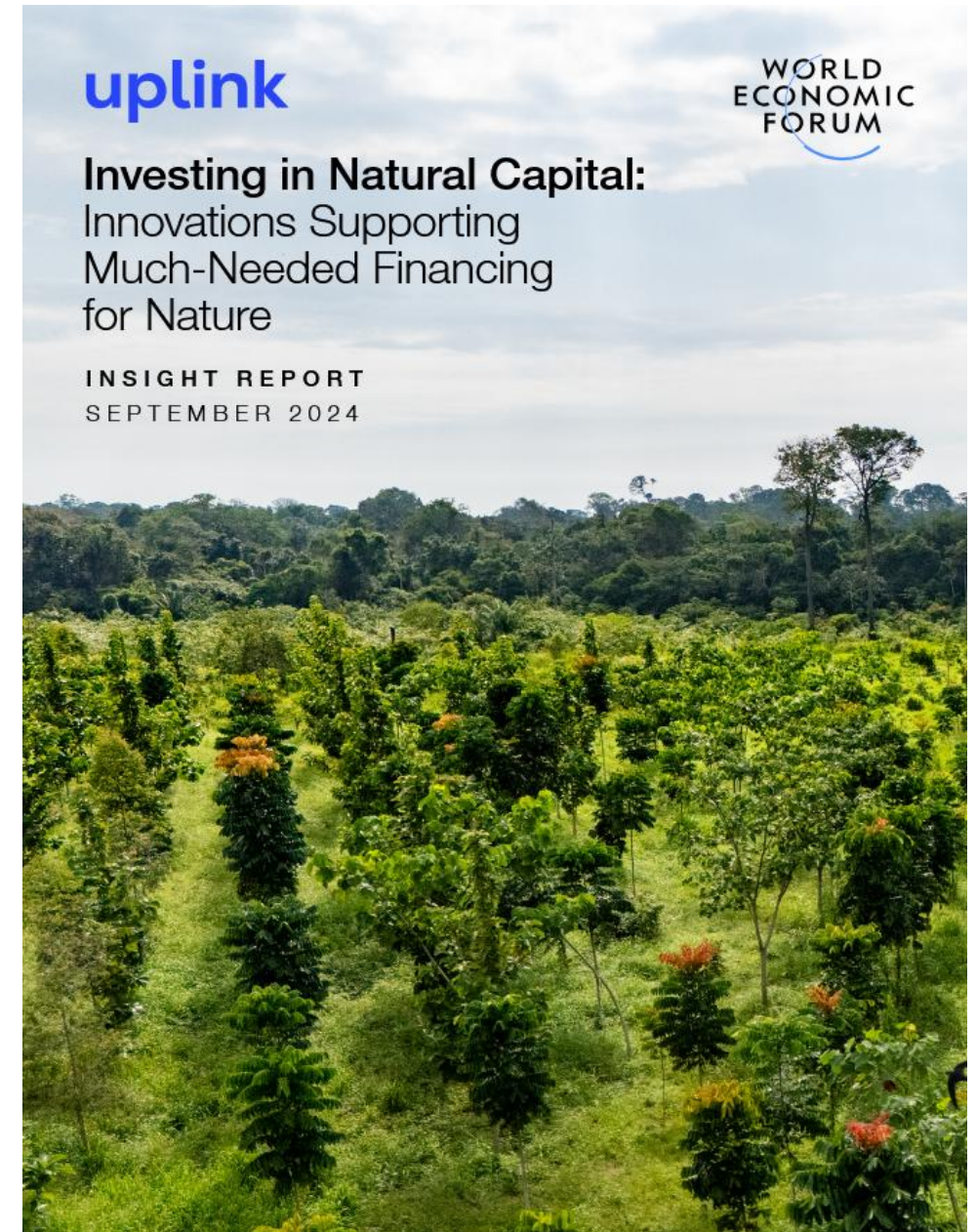# Business&Innovation dependency on Nature

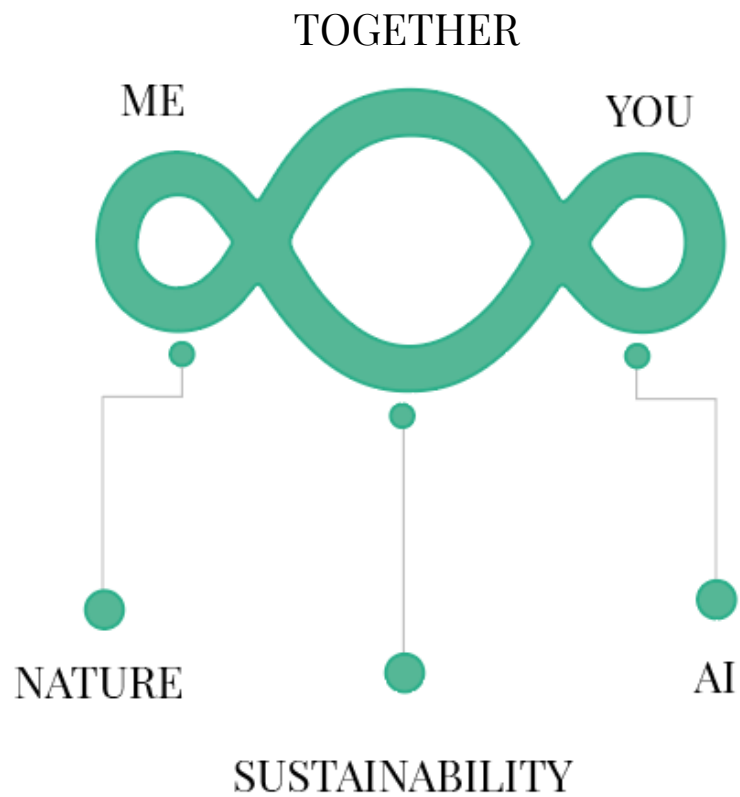

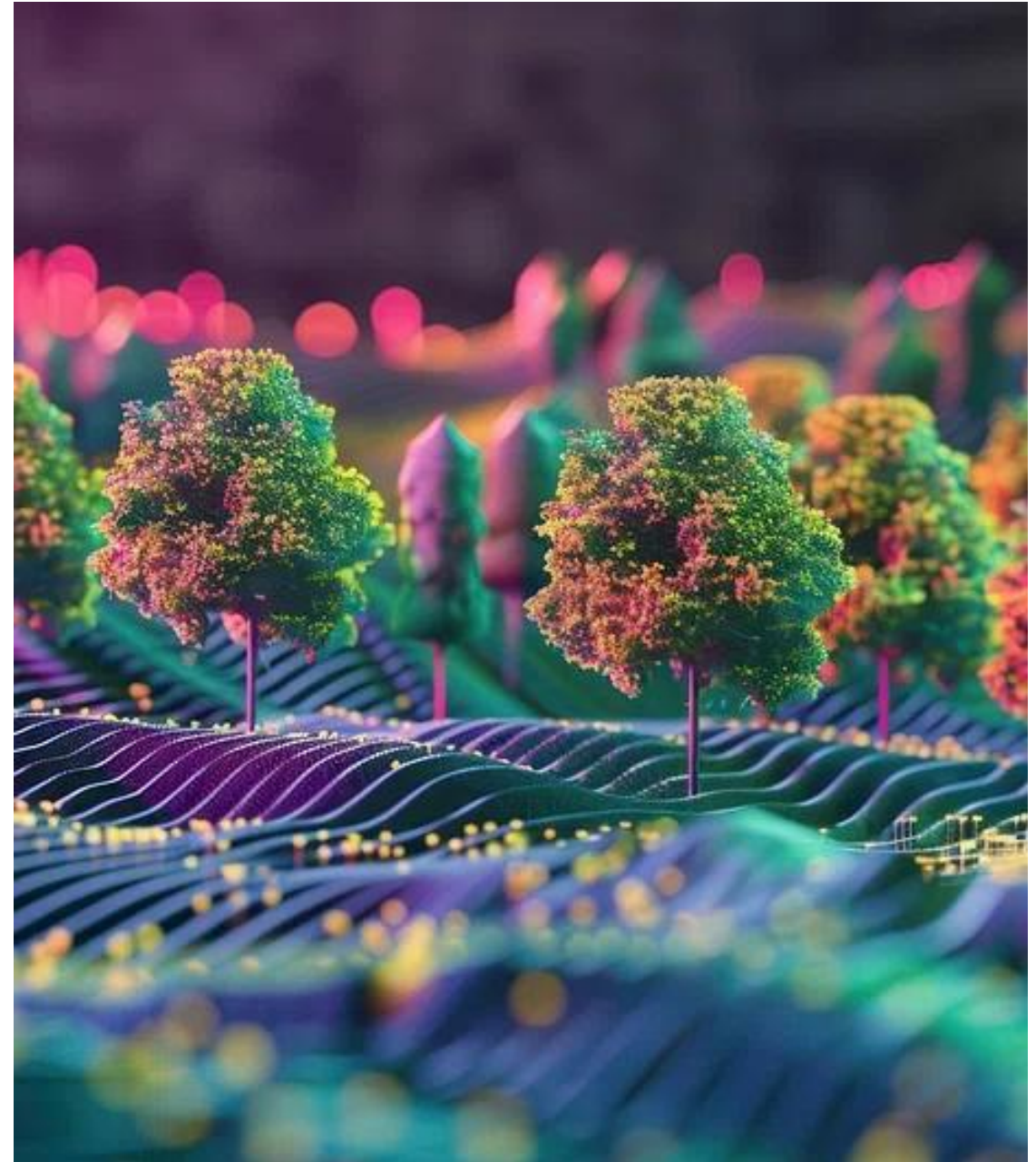[Science Policy brief JRC 2024](#)

[WEF Investing in Natural Capital 2024](#)

Nature & AI for Sustainability

Il terzo paradiso – Michelangelo Pistoletto
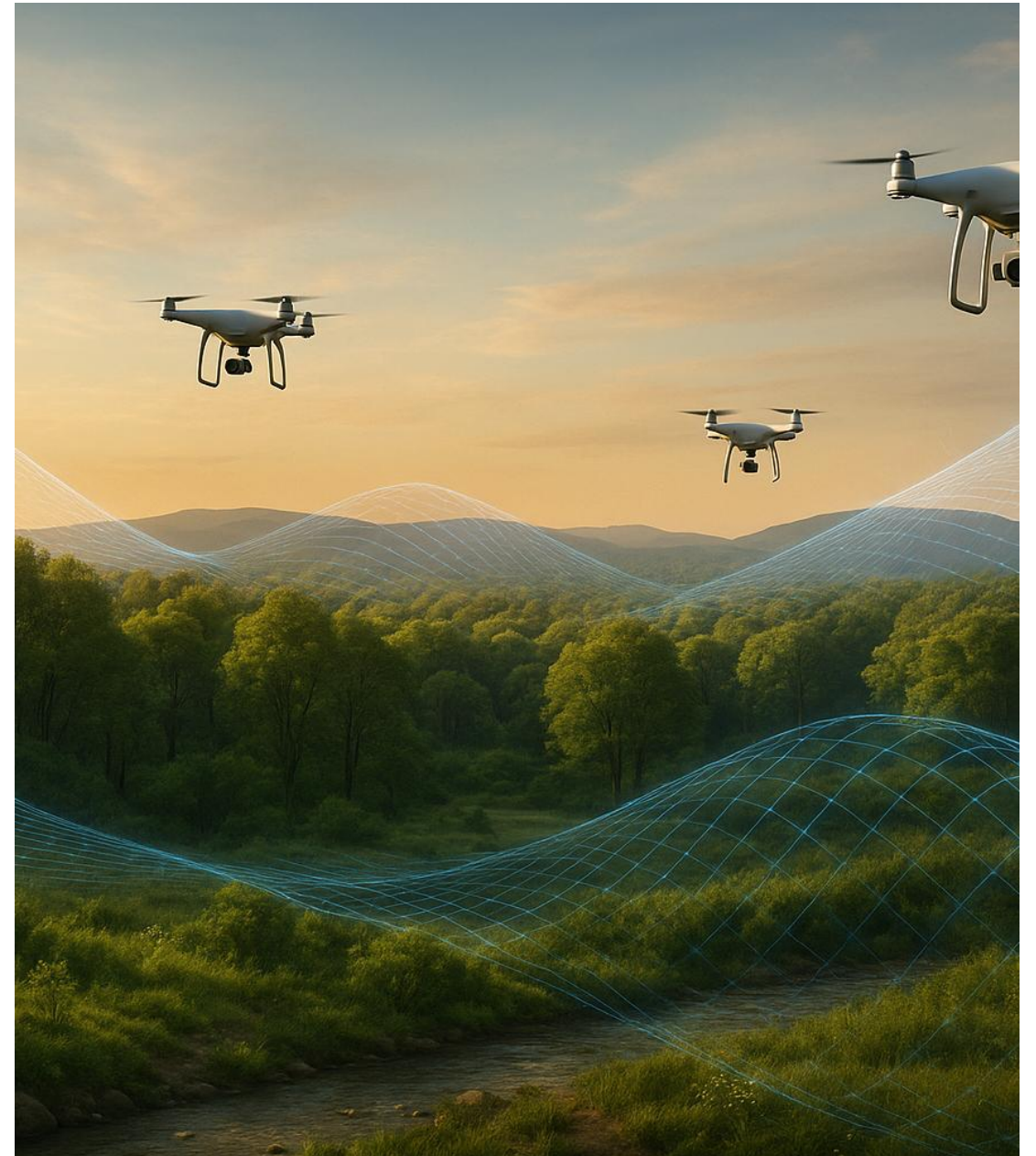
Nature is an evolving system

BEFORE

AFTER

© LAND

LAND CHALLENGE

NAIture landscape modelling

- Improve LAND's Natural Capital quantification model by transforming it into an advanced digital model that integrates AI and real-time remote-sensing environmental monitoring.

- Analysing tree performance (using remote sensing data) to monitor: water stress, health status, attractiveness to pollinators of trees with KPIs

LAND CHALLENGE in details

Input Data

- **3D model** of Landscape project in BIM

- **Tree count** and classification in vegetation species

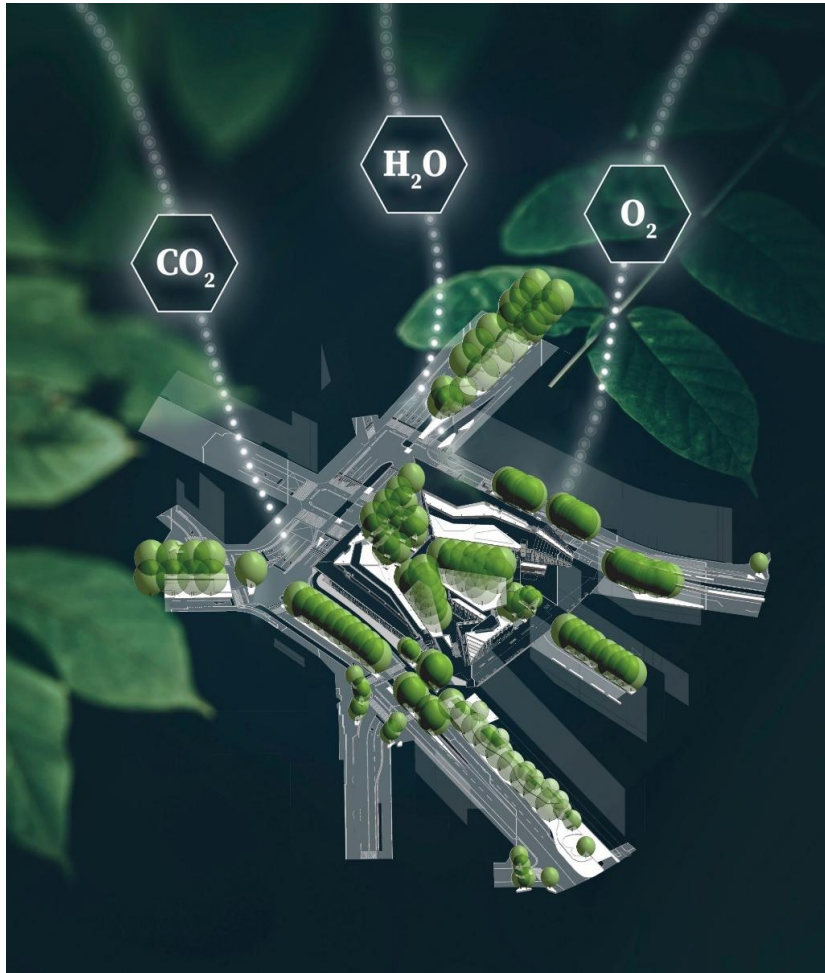- **Environmental KPIs** according to tree growth (0-15-30 years) in CSV

New Input Data

- **Thermal and water stress** resistance of the tree by growth stages (0-15-30 years)

- **Tree health** based on canopy analysis

- **Attractiveness to pollinators** by growth stages (0-15-30 years)

Forecast output

- Expansion of **tree patterns KPIs**

- Landscape 3D models integrated with **Dashboards**

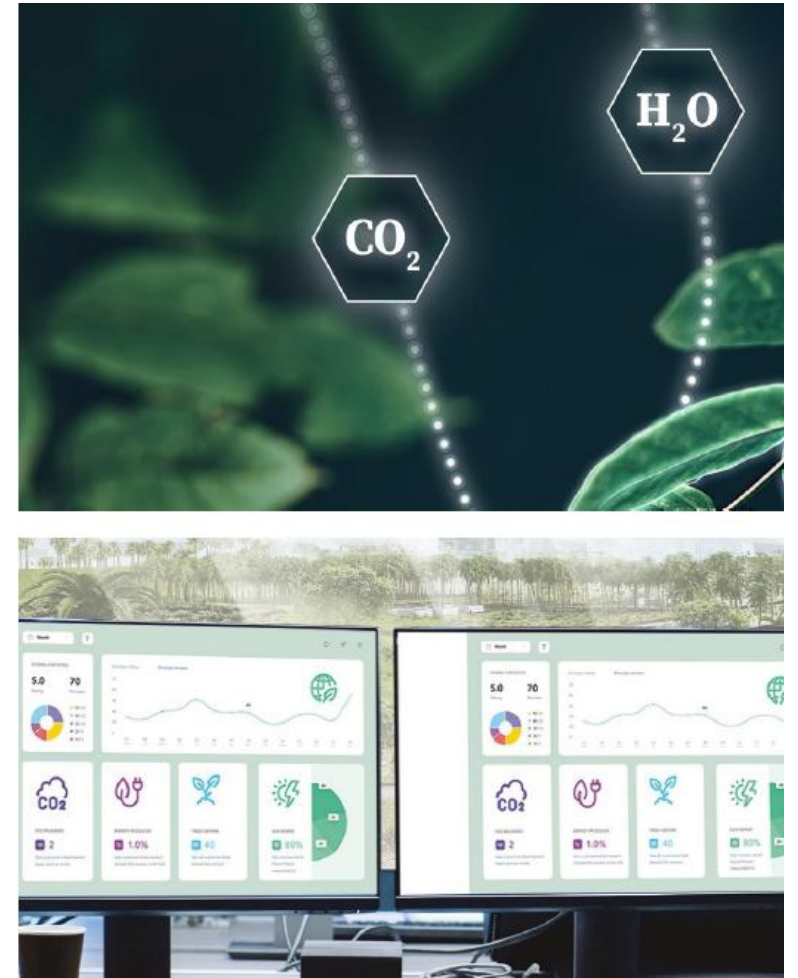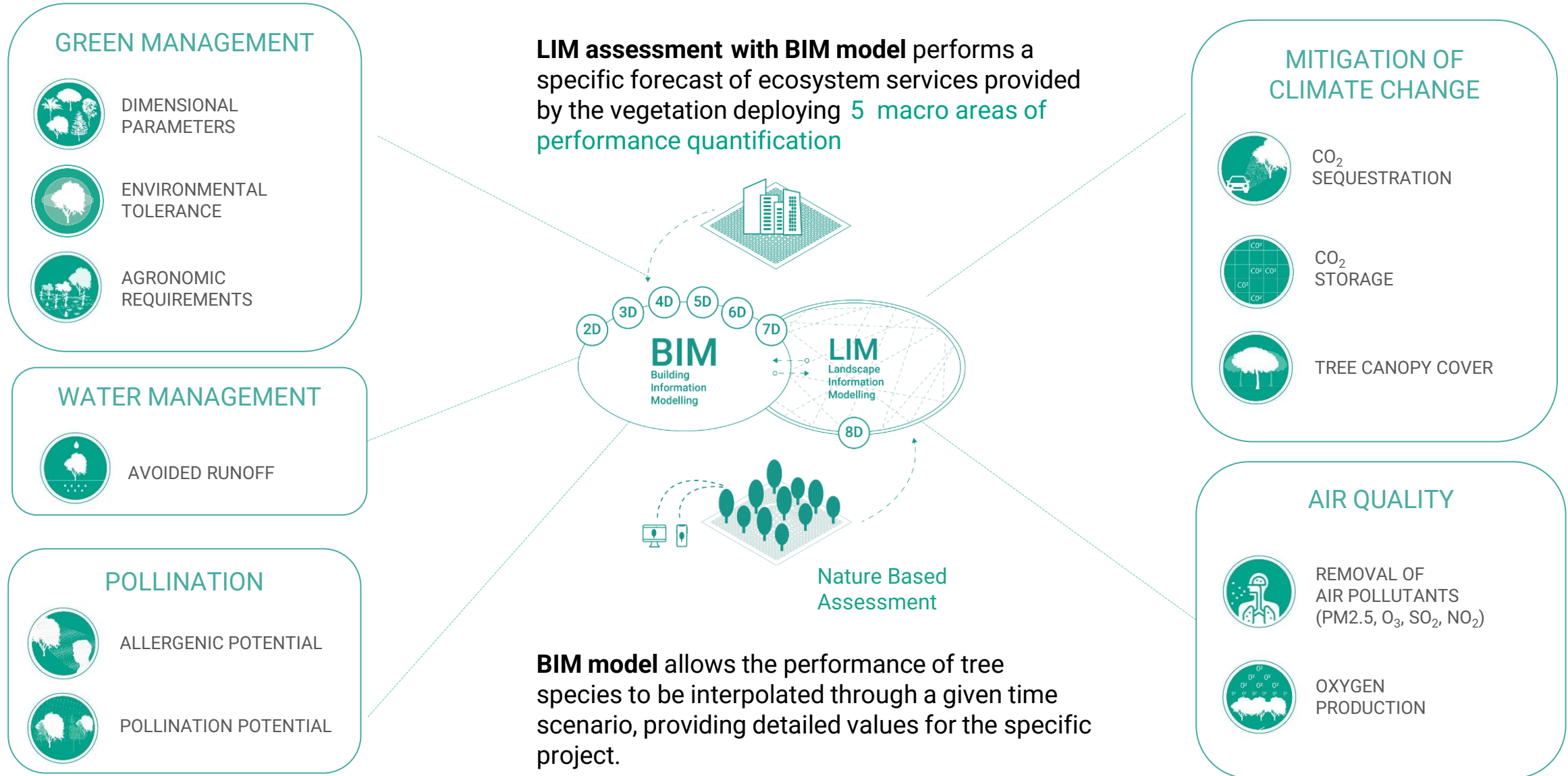- NAIture landscape modeling assistance in **landscape design phases**

FROM LIM MODEL

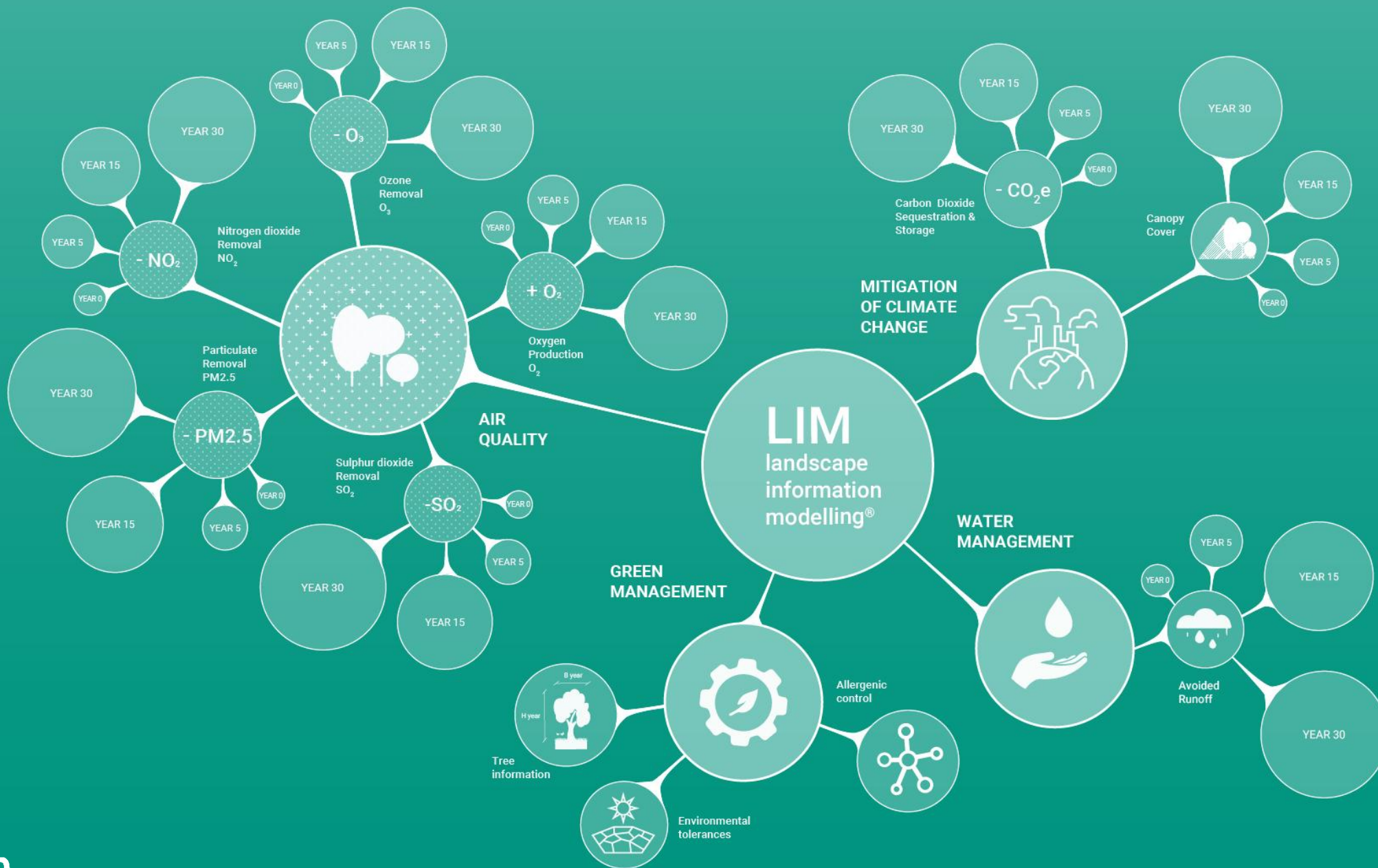**TO OBJECT DETECTION and KPIs WITH AI**

TOWARDS NAIture landscape modelling PROTOTYPE

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LAND Starting point

GREEN MANAGEMENT

- DIMENSIONAL PARAMETERS
- ENVIRONMENTAL TOLERANCE
- AGRONOMIC REQUIREMENTS

WATER MANAGEMENT

- AVOIDED RUNOFF

POLLINATION

- ALLERGENIC POTENTIAL
- POLLINATION POTENTIAL

LIM assessment with BIM model performs a specific forecast of ecosystem services provided by the vegetation deploying 5 macro areas of performance quantification

BIM
Building Information Modelling

2D 3D 4D 5D 6D 7D 8D

LIM
Landscape Information Modelling

Nature Based Assessment

BIM model allows the performance of tree species to be interpolated through a given time scenario, providing detailed values for the specific project.

MITIGATION OF CLIMATE CHANGE

- CO_2 SEQUESTRATION
- CO_2 STORAGE
- TREE CANOPY COVER

AIR QUALITY

- REMOVAL OF AIR POLLUTANTS (PM2.5, O_3, SO_2, NO_2)
- OXYGEN PRODUCTION

LIM
landscape
information
modelling®

AIR QUALITY

Ozone Removal O_3
- O_3
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

Nitrogen dioxide Removal NO_2
- NO_2
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

Particulate Removal PM2.5
- PM2.5
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

Sulphur dioxide Removal SO_2
- SO_2
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

Oxygen Production O_2
+ O_2
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

MITIGATION OF CLIMATE CHANGE

Carbon Dioxide Sequestration & Storage
- CO_2e
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

Canopy Cover
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

WATER MANAGEMENT

Avoided Runoff
YEAR 0 · YEAR 5 · YEAR 15 · YEAR 30

GREEN MANAGEMENT

Tree information
B year
H year

Environmental tolerances
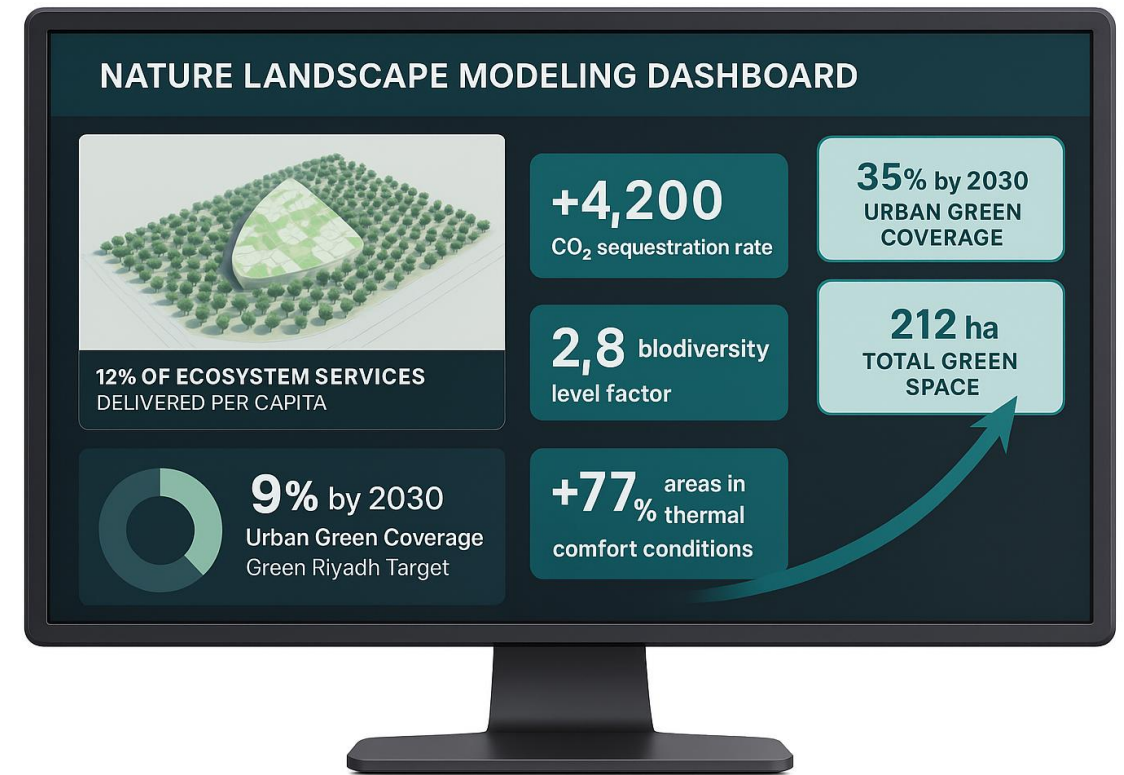
Allergenic control

LAND

Why accept our challenge?

HELP LAND R&D TEAM FOR

- **Smoothing modelling processes** among GIS, BIM and LIM excel files

- **Updating tree KPIs** with new indicators based on changing climatic and environmental conditions with Deep and machine learning

- **Setting User-friendly interface** Dashboards for use by LAND designers

- **Gaming model** for external users/project users

NATURE LANDSCAPE MODELING DASHBOARD

12% OF ECOSYSTEM SERVICES DELIVERED PER CAPITA

+4,200 CO_2 sequestration rate

35% by 2030 URBAN GREEN COVERAGE

2,8 biodiversity level factor

212 ha TOTAL GREEN SPACE

9% by 2030 Urban Green Coverage Green Riyadh Target

+77% areas in thermal comfort conditions

From **LIM** to predictive Ecosystem dashboard with AI

15

Innovating with us makes the difference

MUNICIPALITIES

Supporting municipal technicians in monitoring their green assets for maintenance and expense assessment

PRIVATE SECTOR

Tracking sustainability accounting and regulatory compliance with Nature KPIs

Corporate reputation and attractiveness with landscape project based on Nature's value

PUBBLICO-PRIVATO PARTNERSHIP

NBS business* implementation that generate long-term impact and unlock new market opportunities and business chain

*NBS business estimates over $300 billion/year by 2030, World Economic Forum, 2022

Benefits of matchmaking with LAND

- **Technological acceleration** in Landscape ed Ecological Planning

- **Outreach of new business models** to be scaled in green finance (es. KPIs for Carbon Credits and Biodiversity credits)

- **Cultural and Scientific Impacts** generating reliable data to support investments and foundings

- **Replicability and scalability** of models in European Co-funded project with European Co-funded tenders

NAIture landscape modelling

What's Next?

LANDscape is life.

Creating liveable places all around us.

We live LANDscape in an all-encompassing way. As pioneers of sustainable transformation, we design productive living environments. Our holistic consulting approach is based on the dialectic between nature and culture, enabling us to develop landscape as a capital for future generations. Combining our expertise and lively lightness, we resolutely defy previous paradigms and boldly break new ground. We cultivate a spirit of innovation and diversity as the source of our strength. Throughout our dynamic LAND community, we promote collective learning as a central element of our growth. We share a deep enthusiasm for liveable LANDscapes, which drives us to find new solutions to global challenges.

Reconnecting People with Nature

Our projects always start with a story

Exploring

Curiosity drives us to uncover new possibilities, open new perspectives, and explore novel approaches. We embrace the unforeseen, turning it into opportunities for our clients and partners.

Collaborating

People are the core of our business. We share their passion for sustainable landscapes, empower them to thrive in our projects, and build bridges to new markets.

Cultivating

The LAND community stands for ethical and sustainable values. Living, working and learning together gives us the power to grow and to act with urgency for a better future and a measurable impact.

Landscape
We work at every scale

Architecture
We create space for people

Nature
We cultivate resilience

Development
We strive for sustainable development

LAND

Stay (re)connected

landsrl.com