

Decoding the Climate-Biodiversity Nexus

Building a 7D Digital Twin of the Ecosystem · Horizon Europe

Welcome to the very first newsletter of **TerraTwin**, a Horizon Europe project building a next-generation **Digital Twin of the Ecosystem (DTE)** to help Europe understand, and respond to, the deeply connected crises of climate change and biodiversity loss.

Climate change and biodiversity loss are usually studied in isolation, with fragmented data that rarely crosses borders or disciplines. TerraTwin brings them together. Over three years, our consortium is building a virtual, data-driven replica of real ecosystems (spanning land and sea, past, present and future) that turns raw environmental data into insight for scientists, policymakers and communities.



The TerraTwin journey began at the project kick-off meeting in Athens, Greece, February 2026.

14

PARTNERS

10

COUNTRIES

4

PILOT AREAS

36

MONTHS

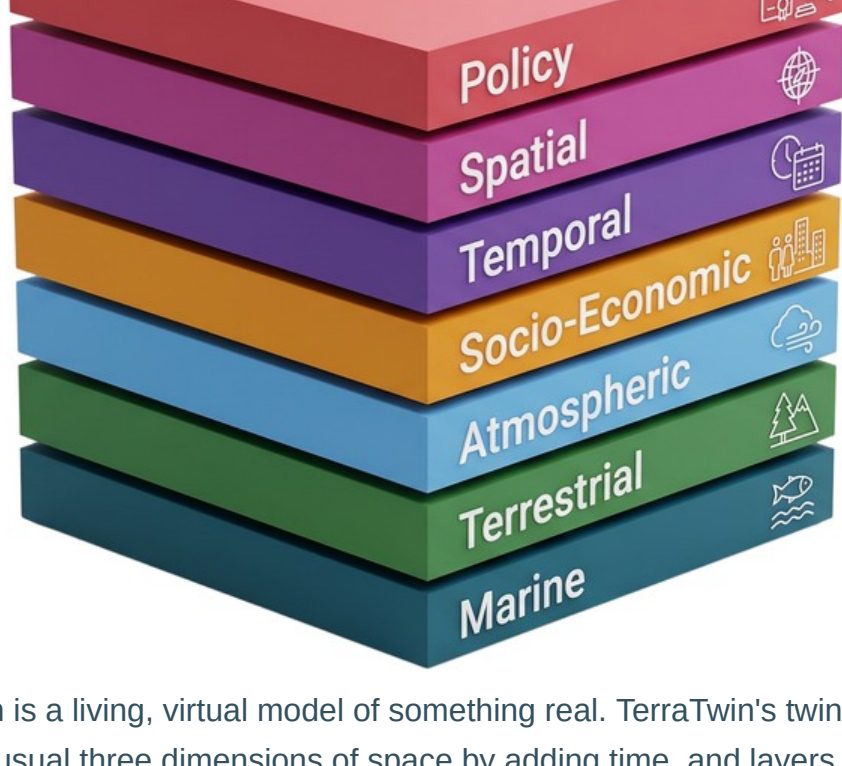
THE CONSORTIUM

TerraTwin brings together 14 partners from 10 countries, combining expertise in environmental science, marine biology, data engineering and digital innovation.

Meet the 14 partners →

THE IDEA

What is a "7D" Digital Twin of the Ecosystem?



A digital twin is a living, virtual model of something real. TerraTwin's twin goes beyond the usual three dimensions of space by adding time, and layers for policy, socio-economic factors and the interplay between them, together forming what we call the **7D approach**. By combining Earth observation, historical and even prehistoric climate records, biodiversity surveys and socio-economic data, the DTE can explore how ecosystems respond to wildfires, floods, warming seas and human activity; and it can test what might happen under different future scenarios.

FOUR REAL-WORLD PILOT AREAS

TerraTwin is grounded in four demonstration areas across Europe, each tackling a different facet of the climate–biodiversity challenge:

GREECE

Wildfire cascades

Tracing how wildfires in NE Attica trigger soil erosion and ripple through terrestrial, freshwater and coastal biodiversity.

SPAIN

Deep-sea restoration

Studying the recovery of Mediterranean fishery no-take zones, a type of Marine Protected Area, off Catalonia.

IRELAND

Coastal fisheries

Predicting the future of multi-fishery areas in Galway Bay, drawing on live and historical ocean observatory data.

BELGIUM

Flooding & soil life

Assessing how compound flooding in Flanders affects the "hidden" biodiversity of soils under extreme climate scenarios.

MILESTONE



The TerraTwin consortium at the 1st Plenary Meeting, Ghent, Belgium, June 2026, with partners joining both on-site and online.

FIRST PLENARY MEETING · GHENT

The whole consortium, together for the first time

In June 2026, our partners gathered in Ghent, Belgium, for two days of collaboration: reviewing progress across every work package, aligning on the four pilot areas, and setting the course for the year ahead. The energy in the room confirmed what makes TerraTwin work: cross-border, cross-disciplinary teamwork.

WHERE WE ARE NOW

Foundations in place

In its first months, TerraTwin has been laying the groundwork that everything else builds on:

Project identity & website launched

Data & Ethics Management Plan

Indicators being defined

Datasets being mapped

Digital Twin architecture designed

Partners have begun defining the ecological indicators the twin will track, and are mapping the many datasets available across the four areas, from satellite imagery and fire maps to underwater observatories, fisheries records and even prehistoric climate archives reaching back millions of years. In parallel, the technical teams have started designing the architecture that will bring all of this together into a working Digital Twin.

Out in the community

TerraTwin is now live and public, and already sharing its story at events across Europe, connecting with sister projects and presenting its first scientific work. We are building synergies with [Trees4Adapt](#), [DIGI4ECO](#) and [STORCITO](#), and we take part in the EU Mission on Adaptation to Climate Change community.



Paula and Laura (CSIC) presenting TerraTwin at the [FOCAL clustering event](#).



Konstantina (Netcompany) presenting TerraTwin's first paper at [EEITE 2026](#).

Our website is online, our social channels are active, and our first [communication materials](#), from the project leaflet to a roll-up banner, have already travelled to their first events.

NEW THIS MONTH

TerraTwin welcomes its External Advisory Board

We are delighted to announce the appointment of TerraTwin's **External Advisory Board**, a group of independent experts who will provide strategic guidance and critical review throughout the project. They bring an external perspective across our core domains, from environmental assessment and coastal planning to remote sensing and the standardisation of Environmental Digital Twins, helping ensure TerraTwin's science, technology and impact stay robust and relevant.



Dr. Leonardo Marotta Minestrini

Environmental consulting & impact evaluation, with a focus on Integrated Coastal Zone Management (ICZM).



Prof. Giorgos Mallinis

Professor of Remote Sensing (Aristotle University of Thessaloniki); RS & GIS for hazards, biodiversity and climate adaptation.



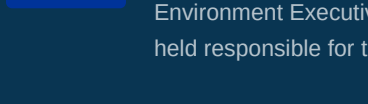
Mr. Sigmund Kluckner

Leading contributor to Environmental Digital Twins and to IEEE standardisation activities in the field.

Meet the Advisory Board →

CONNECT WITH US

Want to follow the journey? Find us on the channels below and visit www.terratwin.eu to learn more.



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