



PROGRAMME OF THE
EUROPEAN UNION



COPERNICUS4REGIONS 2025

EO DATA TO TACKLE URBAN AND ENVIRONMENTAL CHALLENGES IN TARANTO

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This platform allows the Taranto City to monitor the quality of Air, Water, and Public Green to take decisions for the environmental policies.

Rodolfo Sardone,

Head of Urban Health Center, Taranto

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✓ Port and industrial zone in Taranto | Source: Canva

Taranto, a city facing complex industrial and environmental pressures, is enhancing its environmental governance using Copernicus Earth Observation (EO) services. Satellite-based tools support the monitoring of air quality, water, and urban greenery. The goal is to provide local authorities with actionable insights to guide public health and sustainability policies.

THE CHALLENGE

The Municipality of Taranto faces significant challenges due to its industrial footprint and urban density, including poor air quality, coastal water pollution, and limited green infrastructure. These issues affect public health, quality of life, and sustainable planning. The city needs timely, accurate, and integrated data to support evidence-based environmental policies, improve risk prevention, and monitor compliance with European directives. The challenge lies in equipping local institutions with the right tools to make informed and rapid decisions.

THE SPACE SOLUTIONS

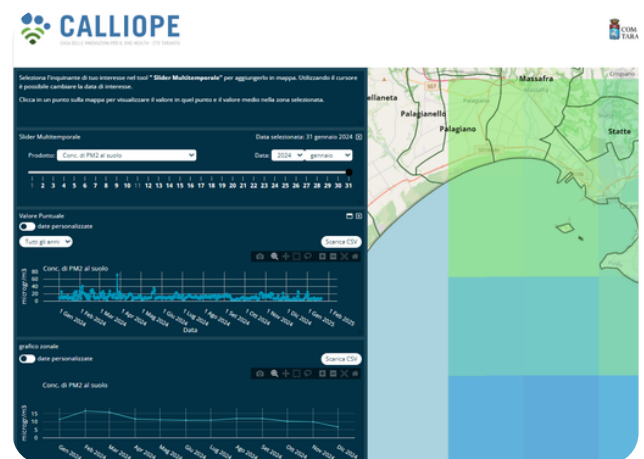
To support Taranto's environmental management, the solution integrates Earth Observation data - especially from Copernicus missions - into one digital platform. The system simplifies vast and complex datasets into actionable intelligence.

Sentinel-5P and CAMS monitor air pollution in near real-time, focusing on critical parameters such as NO₂, SO₂, and PM2.5. Water quality in the Ionian Sea is assessed using Sentinel-2, Sentinel-3, and CMEMS, tracking turbidity, chlorophyll, and surface temperature.

Urban vegetation is monitored through Sentinel-2 imagery and indices like NDVI and LAI to detect degradation and inform green infrastructure planning.

This data is aggregated into user-friendly dashboards tailored for public stakeholders - including the Municipality and Health Agency - enabling faster responses and longer-term planning.

Alerts and analytics improve awareness, compliance, and sustainability governance at the local level.



✓ Calliope platform | Screenshot

THEMATIC AREA



Public Health

REGION OF APPLICATION



Puglia

SENTINEL MISSION USED



S2, S3, S5P

COPERNICUS SERVICE USED



CMEMS, CAMS

THE BENEFITS AND THE BENEFICIARIES

The EO-based services empower the Taranto Municipality to monitor air, marine, and urban green environments more effectively and at a lower cost than traditional systems.

Real-time insights help authorities act promptly on pollution events or environmental degradation, with benefits for public health, risk prevention, and resource efficiency.

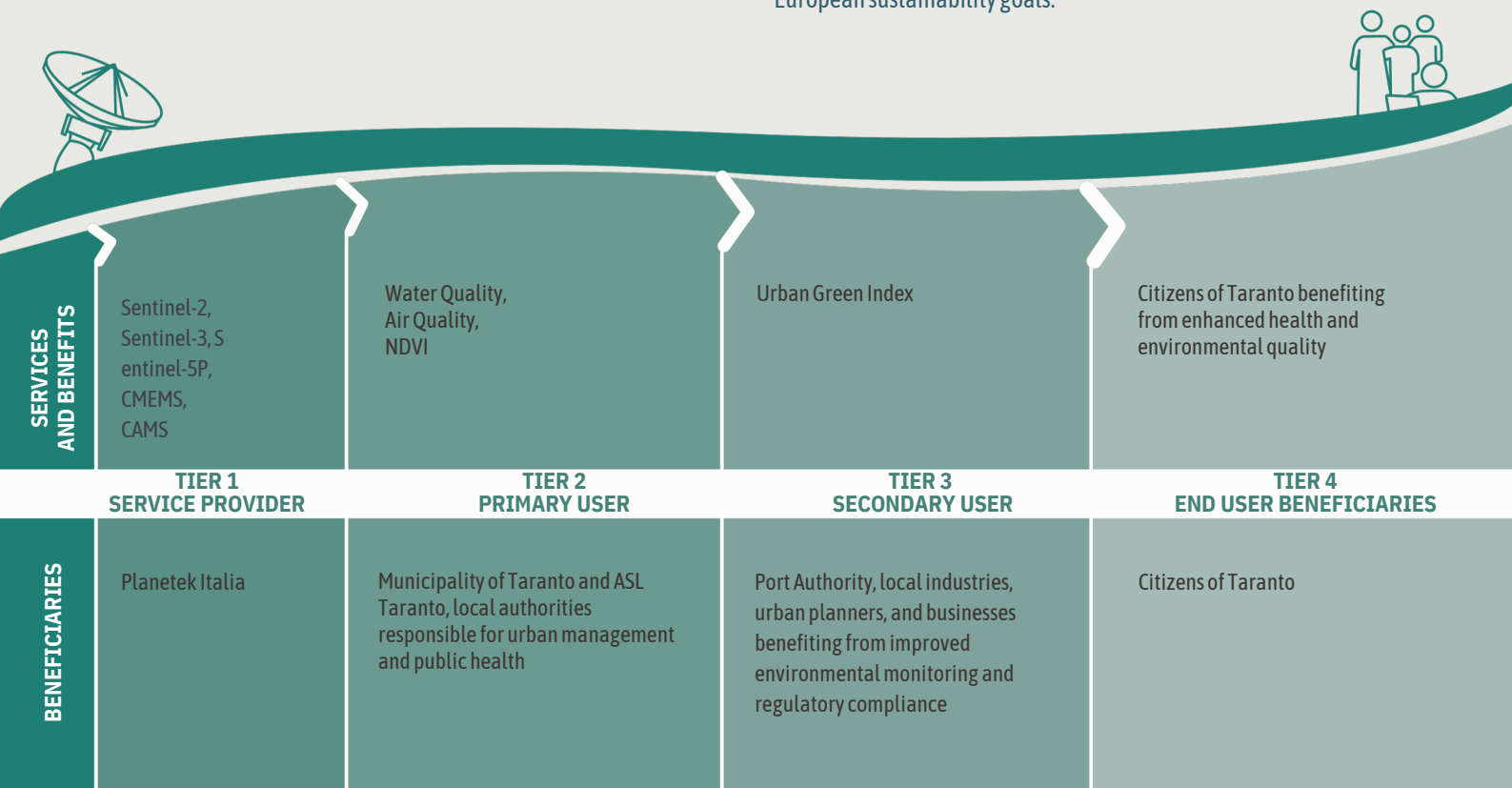
The platform helps to improve air, water, and green monitoring through satellite data, enabling early detection of pollution, eutrophication, and vegetation degradation.

This supports quicker responses to environmental issues, safeguarding natural resources and improving urban resilience.

Copernicus Sentinel open data costs are less than traditional ground-based systems, so we can have wider spatial coverage at lower operational expenses.

User-friendly dashboards simplify complex satellite data into actionable insights, improving decision making processes as urban planning, emergency management, and resource allocation. Accurate monitoring of pollutants and green leads to better health outcomes, environmental awareness, and enhanced quality of life for citizens.

The solution supports local industries, the Port Authority, and businesses in aligning with environmental regulations, improving economic growth while reinforcing regional compliance with European sustainability goals.



EU POLICY / DIRECTIVE



Other

TYPE OF SERVICE PROVIDER



Commercial Service

TYPE OF FUNDING SOURCE



National or regional non space Programme

USAGE MATURITY LEVEL



3



A FUTURE WITH COPERNICUS

The future strategy focuses on enhancing platform capabilities by integrating upcoming Copernicus missions and higher-resolution, higher-frequency data streams. Sentinel constellations, already operational, provide a robust base for real-time monitoring. The platform aims to expand automation, improve interoperability with local systems, and support scaling to other cities. These developments will help boost adoption, foster smarter urban governance, and promote EU-wide environmental resilience.



DID YOU KNOW?

Open and continuous EO data from the Copernicus Sentinels can complement local in-situ monitoring systems: ground sensors deliver detailed point measurements, while satellites provide a broader spatial context with high temporal frequency. As technologies mature and awareness increases, this combination can support cost-efficient and scalable monitoring for local and regional decision-making.



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