

The TOURAL UCCST Approach to Sustainable Development of Tourism Destinations

Vasiliki Drouga, Polyvios Raxis (ATLANTIS Consulting S.A.)

Evdoxia Eirini Lithoxidou, Eleni Tsompanidou, Dimosthenis Ioannidis (Centre for Research & Technology Hellas)

Call: HORIZON-CL2-2023-HERITAGE-01

The main Core



The TOURAL integrated tourism model (UCCST – Underwater, Cultural, Creative, Science and Silver Tourism) supports smart and sustainable tourism development in rural and remote destinations by addressing spatial imbalances between highly developed urban tourism clusters and underrepresented rural areas. The model adopts a multi-dimensional and participatory framework that integrates diverse tourism domains to enhance territorial cohesion. By enabling multi-destination tourism products and fostering cross-regional cooperation, TOURAL strengthens local value chains, improves destination competitiveness, and promotes more balanced and resilient regional development.

Adriatic-Ionian

Destinations/Pilot Sites

Black Sea Basin

TOURAL brings together **6 tourism destinations** across the **Adriatic-Ionian** and **Black Sea Basin** regions.



North Sporades,
Greece



Province of Teramo,
Italy



Island of Pag/Village Šimuni,
Croatia



Danube Delta LAG,
Romania



Kutsurub,
Ukraine



Nessebar,
Bulgaria

Verticals

TOURAL focuses on four strategic tourism sectors:

- Underwater Cultural & Nature Heritage Tourism (UCNHT)
- Cultural & Creative Tourism (CCT)
- Cultural Science Tourism (CST)
- Silver Tourism (SLT)

One-Stop-Shop

The **One-Stop-Shop** provides a financing and business-maturation layer, integrating two dedicated digital tools:

a) a **Funding Instruments Online Repository**, which provides sea-basin and national funding schemes relevant to **TOURAL** tourism value chains.

"Co-work" processes

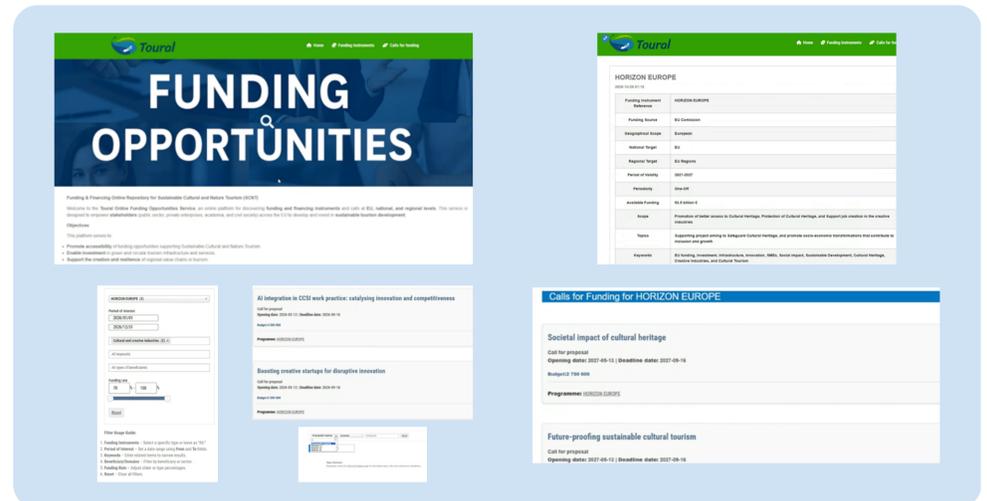
Living Labs (LLs) are participatory workshops that bring together diverse stakeholders to co-create solutions aligned with the real needs and opportunities of local communities. In **TOURAL**, Living Labs combined online and on-site tools to support stakeholder engagement and knowledge exchange through a three-step process:

- **Defining the problem** – identifying current needs for the sustainable development of niche tourism sectors in the Pilot Sites.
- **Envisioning the future** – co-creating desirable future scenarios for each Pilot Site.
- **Backcasting** – identifying the actions, changes, and actors required to achieve these future scenarios.

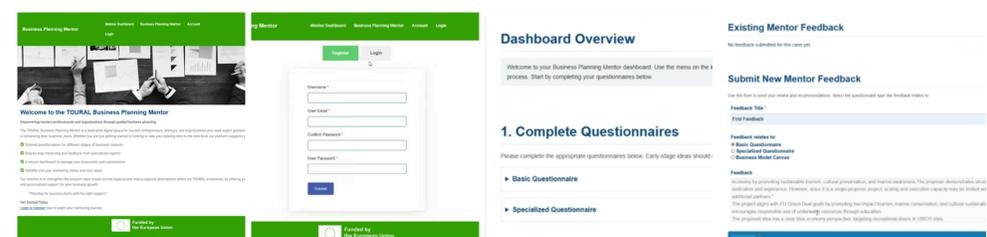
Results

A total of **257 stakeholders** from Policy, Industry, Academia, and Civil Society participated in the TOURAL Living Labs across six pilot sites:

- 136 attended onsite workshops
- 204 completed the online questionnaire
- 83 participated in both activities.



b) a **Business Planning Mentor**, which enables beneficiaries and pre-approved mentors to interact through structured questionnaires, document exchange, and iterative feedback to refine project ideas, assess feasibility, and prepare business plans or project concepts aligned with suitable funding opportunities.





A Unified Digital Platform for Tourism Modelling, Monitoring and Planning in TOURAL

Evdoxia Eirini Lithoxidou, Alexis Papaioannou, Aiki Stefanopoulou, Nikolaos Gkaripis, Eleni Tsompanidou, Dimosthenis Ioannidis

Centre for Research and Technology Hellas (CERTH) - Information Technologies Institute (ITI)

The **TOURAL Digital Platform** integrates advanced ICT tools to support **smarter, data-driven and sustainable tourism planning** in rural, coastal and underwater cultural and natural heritage destinations. The platform operates as a **unified one-stop shop** for public authorities, destination managers and regional planners, enabling them to **assess tourism potential, understand development pressures** and **design balanced and resilient tourism strategies**. By combining **analytical, predictive and immersive components** within a single digital environment, TOURAL supports **evidence-based decision making** and promotes **responsible interaction** with both terrestrial and underwater cultural and natural environments.

Flow Capacity Tool

Spatial insight into tourism pressure and sustainability limits

- Analyses visitor movement patterns, environmental sensitivity and infrastructural capacity through intuitive, map-based visualisations.
- Compares current tourism flows with optimal or sustainable configurations to reveal **pressure points, bottlenecks and sensitive areas**.
- Supports informed decisions on **visitor management, access regulation and long-term destination resilience**.



Multi-Objective Optimization Tool

Strategic optimisation of tourism development choices

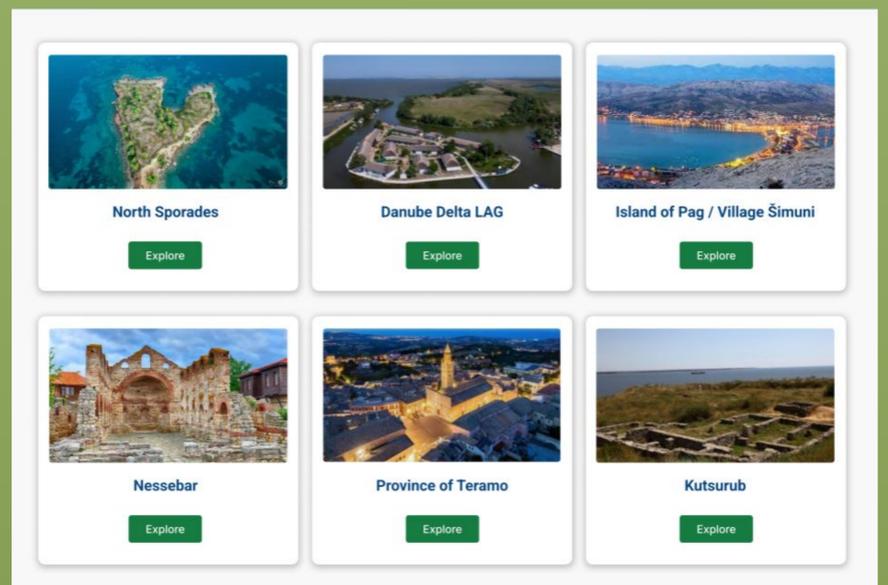
- Compares alternative tourism development configurations across TOURAL's niche tourism sectors using sustainability, accessibility and service-related indicators.
- Identifies weak enabling conditions, such as connectivity, service availability or infrastructure gaps, that limit sustainable tourism potential.
- Generates **AI-assisted, context-aware recommendations** to support balanced, resilient and evidence-based tourism strategies.



VR Content and Serious Games

Immersive engagement for learning and responsible access

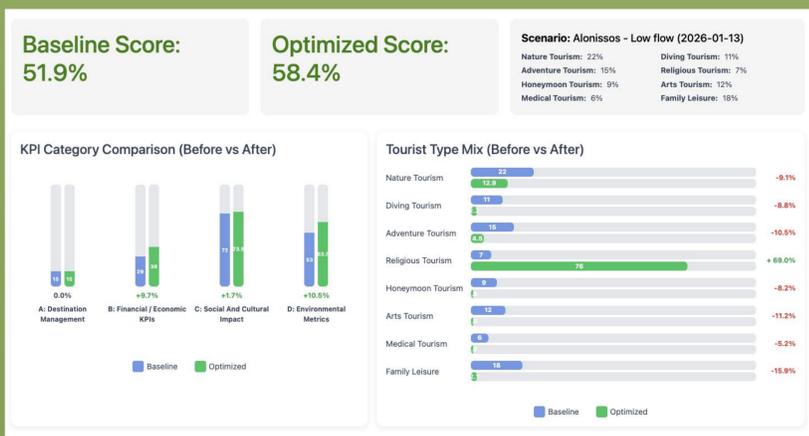
- Provides immersive and interactive experiences that complement analytical tools and enhance education, accessibility and visitor awareness.
- Includes virtual cultural assets and "dry-diving" experiences for underwater heritage, reducing physical pressure on sensitive sites.
- Promotes **responsible interaction and sustainability awareness** through experiential learning and serious games.



Predictive Advisor

Exploring future tourism scenarios before they happen

- Builds on Flow Capacity outputs to enable **forward-looking, scenario-based tourism planning**.
- Allows users to test "what-if" scenarios by adjusting tourist composition, seasonality and visitor volumes, and immediately observe impacts on key capacity and sustainability indicators.
- Supports **proactive decision making** by anticipating risks and trade-offs before policy implementation.



Conclusions

From analysis to action in sustainable tourism planning, the TOURAL Digital Platform demonstrates how the integration of **analytical, predictive and immersive tools** within a unified environment supports evidence-based and sustainable tourism planning. By combining optimisation, capacity analysis, scenario testing and immersive engagement, TOURAL enables a **holistic understanding of tourism potential and pressures**. The platform empowers public authorities and destination managers to move from **reactive monitoring to proactive, resilient tourism strategy design**.

Acknowledgement

This work is part of the **TOURAL project**, funded by the European Union's **Horizon 2020** research and innovation programme under **Grant Agreement No. 101132489**.



Contact:



Funded by the European Union

Project Website:

