IMPACT

Enhanced Water Quality Management: SPECTRA will equip water authorities with the tools to monitor and prioritize contaminants, ensuring cleaner water resources across the Mediterranean.

Strengthened Food Safety: By providing the tools to detect and address contaminants in food products, SPECTRA ensures safer food for Mediterranean consumers and better compliance with EU standards for exporters.

Influencing Policy: SPECTRA will support evidence-based policies that address the region's most pressing environmental challenges, with tools for better decision-making processes at both the national and EU levels.

SPECTRA GA 101158453, invites stakeholders from across sectors to join us in our mission. Whether you're a researcher, policymaker, farmer, or business owner, there are opportunities to engage with our work through workshops, open days, and collaborative events.

CONTACT US

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SPECTRA
TWINNING BOTTOM-UP

TWINNING COORDINATION FOR ENHANCED SCIENTIFIC CAPACITY IN WATER QUALITY, FOOD SAFETY, AUTHENTICITY AND TRACEABILITY BY USING INNOVATIVE APPROACHES

Funded by
the European Union

AIMS

SPECTRA is an EU-funded project aimed at strengthening scientific research and developing innovative solutions to address critical issues related to water quality, food safety, and environmental sustainability across the Mediterranean region.

SPECTRA is a collaborative effort led by AUTH, in partnership with top research institutes and industry leaders. The project focuses on tackling challenges in water quality, food safety, and traceability of Mediterranean food products such as peaches, olives, and mussels. SPECTRA develops cutting-edge technologies like AI-driven monitoring systems, advanced MS techniques, and environmental assessment tools. Our goal is to provide solutions that benefit policymakers, industry stakeholders, and communities alike.

KEY INNOVATIONS

Advanced Monitoring Systems: SPECTRA provides tools to monitor contaminants in water basins and food products with unparalleled precision, covering pharmaceuticals, pesticides, and nanoplastics.

AI-Powered Food Safety: By leveraging AI, SPECTRA ensures accurate food safety monitoring, minimizing human error and supporting food producers in maintaining export standards.

Traceability Solutions: Implementing AI-based tools and spectrometry, SPECTRA supports the traceability of Mediterranean food products, ensuring authenticity and boosting consumer confidence.

CASE STUDIES

Advanced Monitoring in Water Basins

Water Quality, Contaminants Monitoring, Environmental Impact, GIS Mapping, Sustainable Water Management.

This case study focuses on monitoring water quality across key river basins and coastal areas in Greece, including the Aliakmonas and Pineios rivers. Using advanced techniques like mass spectrometry (MS) and geographical information system (GIS) mapping, we track over 500 contaminants such as pharmaceuticals, pesticides, and nanoplastics. The data collected helps to shape sustainable water management policies, ensuring cleaner water for agriculture, aquaculture, and municipal use.

Food Safety and Contaminant Detection

Food Safety, Peaches, Olives, Mussels, Pesticides Detection, Advanced MS Techniques, Food Export Standards

Focused on Greece's key agricultural exports—peaches, olives, and mussels—this case study improves food safety by developing innovative methods to detect contaminants like pesticides and nanoplastics. Using cutting-edge mass spectrometry (MS) and OMICS approaches, we ensure the safety and quality of food products, helping Greece maintain high food safety standards and strengthen its position in international markets.

Food Traceability and Authenticity

Food Fraud Prevention, AI-based Traceability, Authenticity Databank, Consumer Confidence, Greek Food Exports

This case study focuses on preventing food fraud by creating AI-driven tools to verify the authenticity of iconic Greek products like olive oil, peaches, and mussels. By developing a comprehensive databank of authenticity markers, we ensure food traceability from farm to table, safeguarding consumer confidence and boosting the reputation of Greek exports in global markets.

PARTNERSHIP

SPECTRA brings together a diverse team of experts from across Europe to collaboratively address Mediterranean environmental and food safety challenges. Our partners include academic institutions like AUTH, JSI, UAB, and ENEA, as well as private sector stakeholders and policymakers who contribute to our mission of developing innovative, applicable solutions for the region.

ARISTOTLE UNIVERSITY OF THESSALONIKI

ENEA

Jožef Stefan Institute

UAB Universitat Autònoma de Barcelona

SiTeS