Wider Impact

Scientific:

- Covering **different cases of adulteration** including mislabelling, unapproved enhancement, concealment, substitution and dilution.
- Reducing complexity and **increase transparency, traceability, trust and security** in the organics and GIs supply chain.

Societal:

- **Providing fair competition** rules for communities that promote sustainability.
- **Empowering consumers** by providing them with the means to be better informed, and allowing them to improve their decision capabilities regarding the food they purchase and providing them with access to safe, healthy and high-quality food.

Environmental:

- **Enabling large scale monitoring** of biodiversity elements as well as assessment and quantification of the contribution of organic management practices on carbon accounting and sequestration and erosion reduction.
- **Promoting sustainable and healthy food** systems including tools and approaches that assure climate change mitigation and environmental sustainability.
- Having a direct contribution to the **sustainability of the seafood production,** whilst assuring fair, safe, healthy and resilient food value chains that rely on environment friendly solutions.

Economic:

- **Reducing** more than **20% of operational costs** associated with **organic farming practices.**
- **Minimizing** overall **administrative cost** for inspecting and verifying quality labelled food products.
- **Promoting fair economic retribution for local farmers** and operators while contributing to economic growth and equal employment opportunities.

Project Facts

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Project Coordinator:
Institute of Communication and Computer Systems (ICCS)

Communication Manager:
SEABILITY (SEAB)

THEROS consortium

Funded by the European Union

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THEROS

An integrated toolbox for improved verification and prevention of adulterations and non-compliances in organic and geographical indications food supply chain

Transparency and trust in organic food supply chain & GI products

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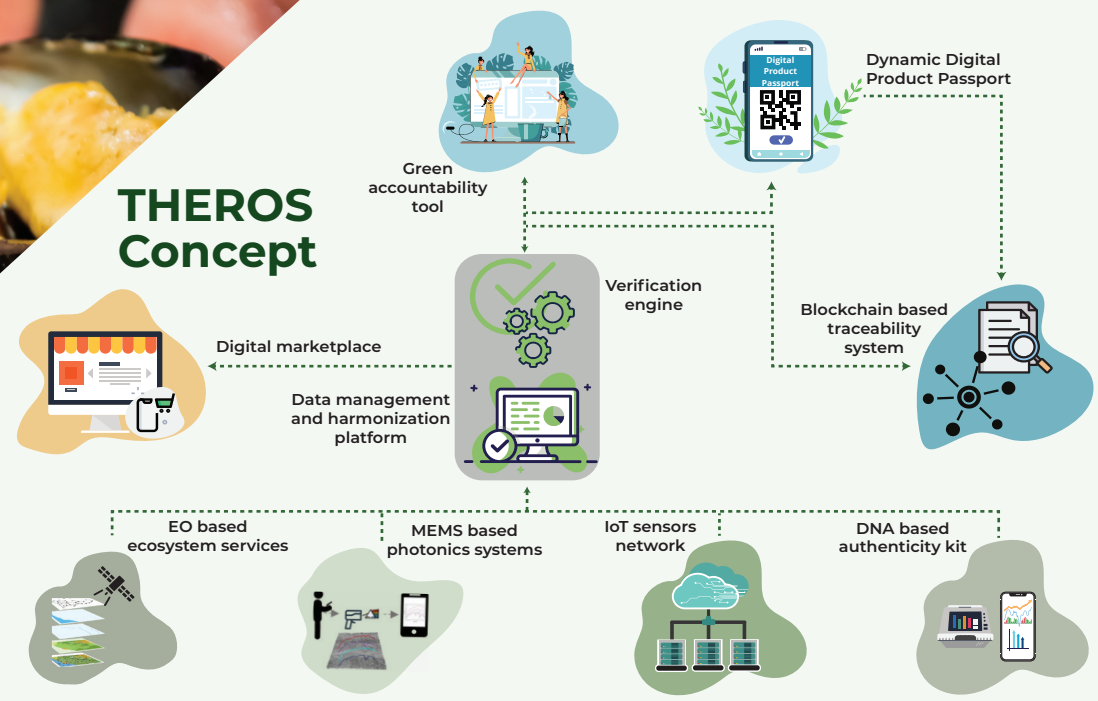
THEROS Concept

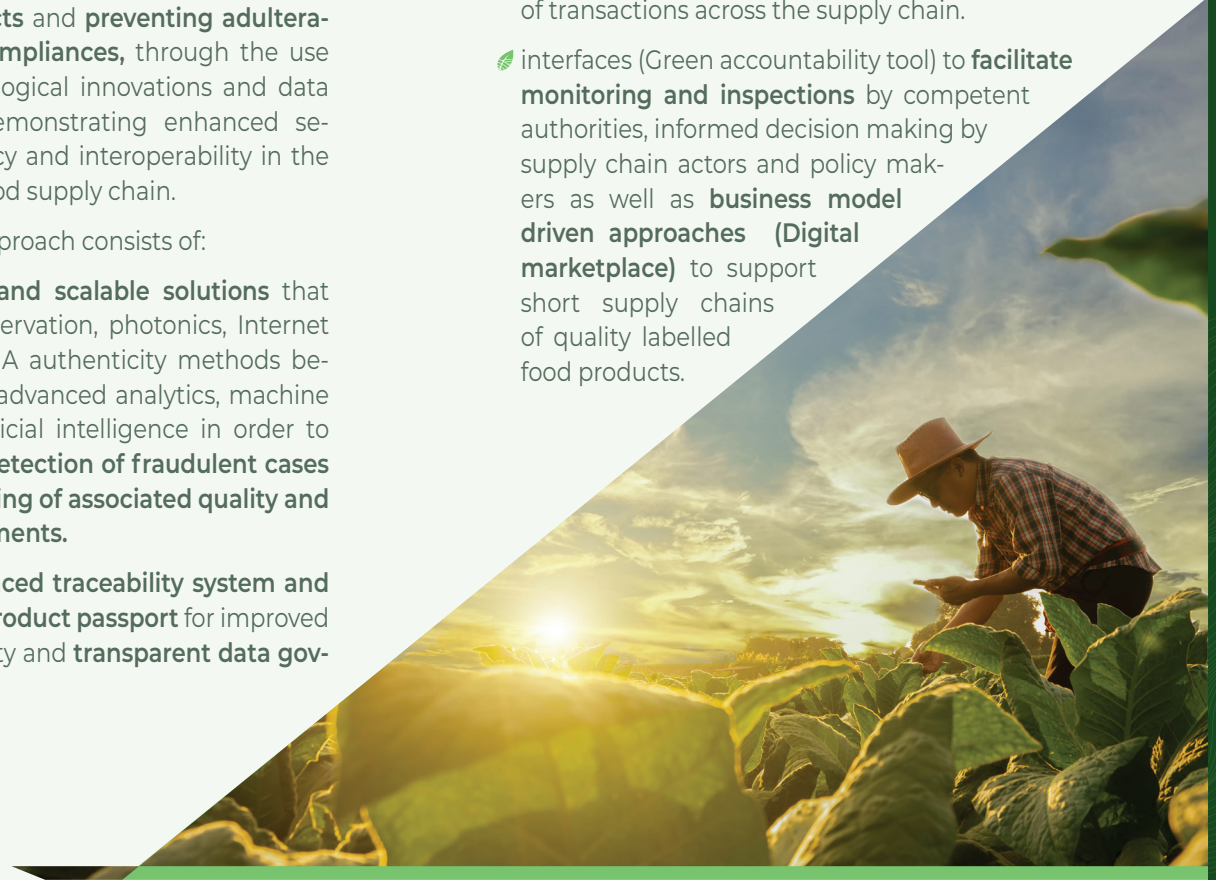


THEROS Vision

THEROS aims to implement **an integrated toolbox** being capable **to modernise the process of verifying organic and geographical indications food products** and **preventing adulterations and non-compliances,** through the use of various technological innovations and data sources, while demonstrating enhanced security, transparency and interoperability in the quality labelled food supply chain.

The envisioned approach consists of:

- **low-cost, digital and scalable solutions** that rely on Earth Observation, photonics, Internet of Things and DNA authenticity methods being coupled with advanced analytics, machine learning and artificial intelligence in order to ensure **efficient detection of fraudulent cases** as well as **monitoring of associated quality and sustainability elements.**
- **blockchain enhanced traceability system and dynamic digital product passport** for improved traceability, security and **transparent data governance.**
- **platforms and algorithms** allowing **management and harmonisation of heterogenous data** as well as their consolidation for the verification and validation of transactions across the supply chain.
- interfaces (Green accountability tool) to **facilitate monitoring and inspections** by competent authorities, informed decision making by supply chain actors and policy makers as well as **business model driven approaches (Digital marketplace)** to support short supply chains of quality labelled food products.



Pilot Demonstrations

THEROS toolbox components will be extensively evaluated in real life settings through four pilot demonstrations in four different countries (Serbia, Greece, Spain and Czech Republic), while covering diverse requirements, involvement of all relevant actors and different organic/geographical indication food products and fraud/adulteration cases.

Adulteration prevention of processed quality labelled food products

Adulteration prevention of fresh/bulk organic agri-commodities

Data driven business model for organic food fraud/adulteration prevention

Adulteration prevention of geographical indication food products