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INNOVATIVE RECOVERY TECHNIQUES FOR ALTERNATIVE FERTILISERS

Advancing Nutrient Circularity:
From Baltic Challenges to FERTITEC Solutions

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FERTITEC at a glance

Key Mission:

To map, assess and promote Best Available Techniques (BATs) for producing sustainable fertilisers from secondary raw materials, supporting nutrient circularity in the EU and beyond.

Project Title	FERTIliser product recovery from secondary raw materials using best available TEChniques
Acronym	FERTITEC
Type of Action	Coordination and Support Action (CSA)
Call	HORIZON-CL6-2024-ZEROPOLLUTION-01-2
Programme	Horizon Europe – Cluster 6: Food, Bioeconomy, Natural Resources, Agriculture and Environment
Topic	Zero Pollution – Nutrient recovery and alternative fertilisers
Project Number	101181513
Duration	1 January 2025 – 31 December 2027 (36 months)
Coordinator	RISE Research Institutes of Sweden
Consortium	7 partners from Europe and East Africa
Budget	€1.98 million (lump sum)

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Challenge

How can we *overcome hurdles* towards the *broad adoption of fertilisers with reduced environmental impact* in the EU and beyond?

Solution

Gather *evidence* on, *analyse* and *promote technologies, techniques, and practices* for the production and use of *alternative fertilisers from secondary raw materials.*

Approach

Analyse, systematise and spread knowledge and information about *Best Available Technologies* for recovering nutrients from secondary raw materials and *foster collaboration* of value chain stakeholders at *EU and international level*

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FERTITEC's Objectives

Map existing technologies for recycling/recovering nutrients for alternative fertilising products, identify case studies of existing installations and study their current market status and potential

Develop the FERTITEC Knowledge Exchange Platform, alongside the AI-powered EcoFerti tool and establish the FERTITEC Stakeholders' Network and Experts Panel for knowledge sharing and advice towards practical uptake

Assess technical aspects, environmental and socioeconomic impacts as well as scalability potential of case studies and support adoption

Determine Best Available Techniques (BATs) and offer capacity building to key actors

Raise awareness, cluster with relevant initiatives and communicate the project, disseminating its results, while also acting towards their widespread adoption and sustainable exploitation

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FERTITEC enables the uptake of circular fertiliser technologies through coordination, knowledge sharing, and capacity building.

- FERTITEC builds on the progress of several EU-funded initiatives that have explored the potential of waste management and nutrient recovery from several perspectives
- Integrating these insights and technological advancements FERTITEC strives to deliver a comprehensive solution for waste recycling and sustainable fertiliser production from secondary raw materials
- By involving key actors from the agriculture sector and facilitating multi-stakeholder discussion through our Knowledge Exchange Platform, FERTITEC fosters a community-driven approach to boost sustainable innovation in the fertiliser sector
- Ultimately supporting efforts for the transformation of waste into high-quality fertilisers, thus promoting a circular economy, and mitigating environmental impact, aligned with the EU's strategic focus

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Global Impact

Rapid waste growth and **low agricultural productivity** are significant issues in **Sub-Saharan Africa**

Therefore, we will **extrapolate our outcomes to the African Union landscape** by providing practical recommendations and guidelines

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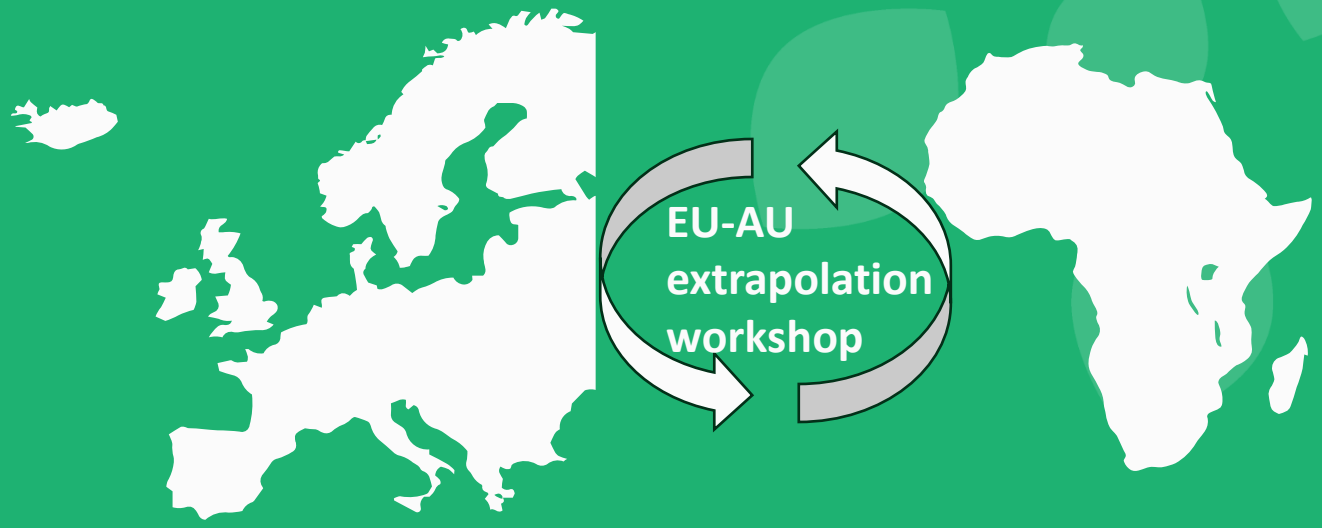
European Union – African Union Cooperation

Cooperation Mechanisms:

- **Exchange of data** on alternative fertiliser products from waste streams
- **Identification and analysis of case studies** of existing installations both in the EU and AU
- **Transferal of knowledge** produced by FERTITEC that is relevant for the AU landscape to **key policy makers and authorities** (at all levels)
- **Actionable recommendations** for supporting the adoption of fertilising solutions **amongst farmers and rural communities across Africa**



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How will FERTITEC achieve its objectives and support PA Nutri goals?

PA Nutri Theme	FERTITEC Contribution
Circular nutrient flows	Promotes BBFs and nutrient recovery from waste
Water-bioeconomy link	Tackles wastewater nutrient streams
Regional self-sufficiency	Highlights local BATs to reduce imports
CAP reform alignment	Identifies enabling conditions for circular markets
Policy coherence	Prepares policy briefs and regulatory recommendations

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What kind of “solutions” does FERTITEC offer?

Category	FERTITEC Contribution (CSA Solution)
Knowledge System	Creation of the **FERTITEC Knowledge Exchange Platform** to connect actors and disseminate best practices.
Technology Scouting	**Mapping and assessment** of existing nutrient recovery technologies in the EU and East Africa.
Decision Support Tools	Development of **EcoFerti**, an AI-powered tool to guide farmers and stakeholders in selecting BBFs.
Validation of Practices	Identification and co-validation of at least **12 Best Available Techniques (BATs)** for fertilisers from waste.
Policy & Market Enablement	Design of **policy briefs** and business models to foster market uptake of alternative fertilisers.
Capacity Building	Field visits, training, and knowledge transfer to farmers, advisors, SMEs, and authorities.
EU-AU Extrapolation	Tailored knowledge transfer to African contexts, via case studies and a dedicated **EU-AU workshop**.

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Phase 1 – Set Up & Preparation

- Establish a Stakeholders Network and Experts Panel to mobilise a genuine multi-actor approach that covers the quintuple helix and can ensure key expert advice and effective knowledge sharing over the project lifetime.

- Map the technological state of play to recover nutrients for fertilising products from secondary raw materials in the EU and AU, cataloguing the recovery/recycling techniques, technologies and derived fertilising products in a comprehensive database.

- Use the database to identify case studies of existing installations converting secondary raw materials into fertilisers from our case regions in the EU and East Africa. Once identified, we will assess the market and regulatory framework that affects their performance and exploitability.

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Phase 2 – Development & Assessment

- Set up and operate the FERTITEC Knowledge Exchange Platform as a virtual space for networking, good practice and knowledge exchange based on identified solutions among key stakeholders of alternative fertiliser-relevant sectors.

- Develop the AI-powered EcoFerti tool, which will support farmer decision making by offering users personalised recommendations for the optimal use of alternative fertiliser products.

- Assess the gathered case studies against technical, environmental and socioeconomic factors to start the road towards determining which may be classed as Best Available Techniques for alternative fertiliser production from secondary raw materials.

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Phase 3 – Co-Evaluation & Validation

- Perform a cross-case analysis of identified existing installations, techniques, technologies, and products to determine effectiveness, efficiency, environmental impact, and economic viability to distil a set of Best Available Techniques for alternative fertiliser production.

- Co-validate the identified techniques with our Experts' Panel and Stakeholders' Network to ensure that the final selection is grounded in expert knowledge.

- Conclude on at least 12 Best Available Techniques for alternative fertiliser products from secondary raw materials to be widely disseminated and serve as a basis for making the sector more sustainable and circular.

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Phase 4 – Stakeholders Empowerment, Knowledge Transfer, Mutual Learning, & Good Practice Exchange

- Design and implement capacity building programmes to raise knowledge and skills on alternative fertilisers and importantly, our identified Best Available Techniques, accompanied by field visits to existing installations to further improve knowledge, awareness, and networking.

- Define sustainable business models for the Best Available Techniques to ensure their commercial viability and set a strong path to their future ecosystem uptake.

- Co-design several policy briefs to aid the establishment of an enabling environment for recycling/recovery techniques of nutrients from secondary raw materials for alternative fertilising products. Ensure their adoption in the African context through an EU-AU extrapolation workshop.

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