

ROOTRESERVE

Living Biodegradable Root-Zone Reservoirs for Climate-Resilient Agriculture and Land Restoration

Preliminary Horizon Europe 2027 Project Concept Note | Partner Search

RETAIN WATER -> PROTECT MICROBES -> SUPPORT ROOTS -> BIODEGRADE

PROJECT AT A GLANCE

Concept	Biodegradable bioactive root-zone material
Core idea	A matrix placed around plant roots to retain and gradually release water, reduce nutrient losses and create a protected habitat for beneficial microorganisms.
Primary application context	Climate-resilient agriculture, nurseries, forestry and land-restoration environments, including heat-, salinity- and degradation-stressed conditions.
Current status	Early-stage concept intended for joint refinement with an experienced Horizon Europe coordinator, research organisations and European pilot partners.

CHALLENGE AND PROPOSED SOLUTION

THE CHALLENGE

Young plants and restored landscapes are highly vulnerable during establishment. Water stress, nutrient loss and poor survival of beneficial microorganisms reduce plant survival and increase irrigation demand.

THE PROPOSED SOLUTION

Develop a biodegradable root-zone matrix that stores water, releases it gradually, reduces nutrient losses and creates a protected habitat for beneficial microorganisms around the roots.

PROJECT OBJECTIVES AND EXPECTED OUTPUTS

- Develop biodegradable root-zone product prototypes suitable for testing and future scale-up.
- Generate evidence on water retention and plant survival during establishment.
- Validate microbial compatibility and soil safety.
- Define a manufacturing, scale-up and market-entry pathway.

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ROOTRESERVE - PARTNERSHIP & DELIVERY CONCEPT

ANGUZAL AGROSERVIS CONTRIBUTION

- Microbial formulation and compatibility testing.
- Prototype production and process scale-up.
- Trials under heat, salinity and soil degradation.
- Agronomic and commercial validation under Central Asian agricultural conditions.

PARTNERS SOUGHT

- Experienced Horizon Europe coordinator.
- Materials or biopolymer RTO / university.
- Soil-water specialist.
- Biodegradation and ecotoxicology partner.
- European forestry, orchard, nursery and/or land-restoration pilot partners.
- Manufacturing SME for scale-up and production pathway.

POTENTIAL EUROPEAN DEMONSTRATION ROLE

Useful demonstration and replication environments include forestry, nurseries, municipalities, rural stakeholders and land-restoration sites. European partners can provide pilot access, stakeholder engagement and links to materials and soil-science expertise.

INDICATIVE WORKSTREAMS derived from the current concept

Workstream	Main focus	Likely lead / partner type
1	Material & prototype development	Materials / biopolymer RTO or university
2	Microbial compatibility & formulation	Anguzal Agroservis
3	Soil-water and plant-establishment testing	Soil-water specialist + pilot partners
4	Biodegradation, ecotoxicology & soil safety	Specialist research partner
5	European pilots, replication & stakeholder engagement	Forestry / orchard / nursery / land-restoration partners

COLLABORATION PROPOSITION

Anguzal is seeking partners to jointly refine the technical concept, pilot design, consortium structure and Horizon Europe proposal. The concept is deliberately open at this stage so that materials science, soil-water expertise, biodegradation assessment, European pilot environments and manufacturing capabilities can be integrated from the start.

PARTNER SEARCH PRIORITY

Coordinator + materials/biopolymer research + soil-water expertise + biodegradation/ecotoxicology + European pilots + manufacturing scale-up

Preliminary concept note based on Anguzal Agroservis' August 2026 Horizon Europe 2027 project brief.

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