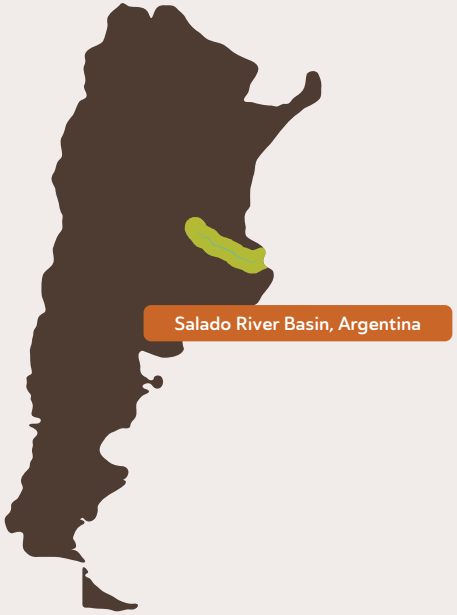
Argentinian Use Case: **Cultivating in Saline Soils**



Introductory Information:

Location: Pampas Region, Argentina (with replication focus on Salado River Basin)

Area: 15,000 hectares

Climate: Temperate with drought and flooding cycles

Bio-based products: Winter oilseeds (camelina, carinata, canola), PGPR-based biofertilizers, edible mushrooms

Benefits:

- Biodiversity enhancement
- Sustainable crop diversification
- Circular use of biomass
- New bio-based products
- Replication potential
- GHG emissions reduction
- Improved soil quality

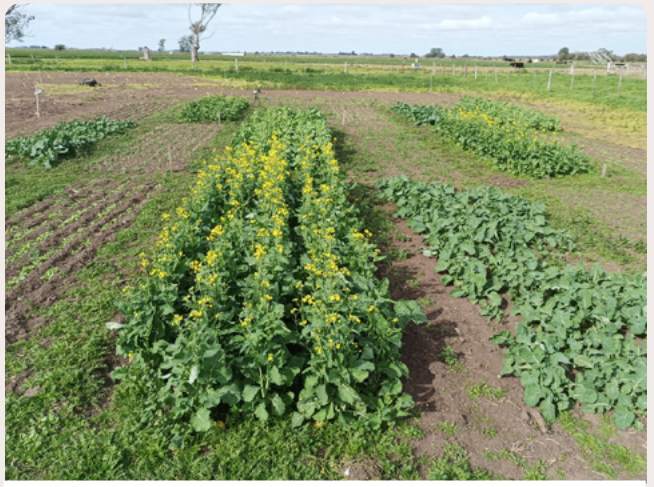
Main Challenges

Marginal lands of the Pampas Region are affected by salinisation, waterlogging, and flooding, which render them unsuitable for conventional agriculture.

Solution within MarginUP!

Explore three innovative value chains:

1. Sustainable production of winter oilseed crops such as camelina, carinata, and canola.
2. Use of plant-growth-promoting microorganisms (PGPRs) and endophytic fungi delivered via organic nanoparticles derived from native plants.
3. Cultivation of edible mushrooms using hay from native Lotus grasslands.



The project studies the production of winter oilseed crops such as camelina, carinata, and canola. Photo: MarginUp! Consortium

Stakeholders Engaged

- Agriculture IoT companies
- Small businesses using nanoparticles
- Importers of phosphoric rock
- Researchers
- Local agricultural producers and innovators

Replication Potential

High replication potential for saline or waterlogged lands globally, with scalable models in microbial biotech, sustainable oilseeds production, and biomass-based food production.

Expected Results

- Improved agricultural practices in saline and waterlogged soils
- Prototype fertilisers using nanoparticles and PGPRs
- Sustainable mushroom production from native biomass
- Data on environmental services (soil restoration and nutrient cycling)
- Partnerships with EU stakeholders for long-term development

Project's Timeline

2023 – 2024:

- Winter oilseed crop trials (camelina, carinata and canola)
- Study of PGPR and endophytic fungi isolated from native plants
- First nanoparticle formulations and mushroom trials (using Lotus hay)

2025:

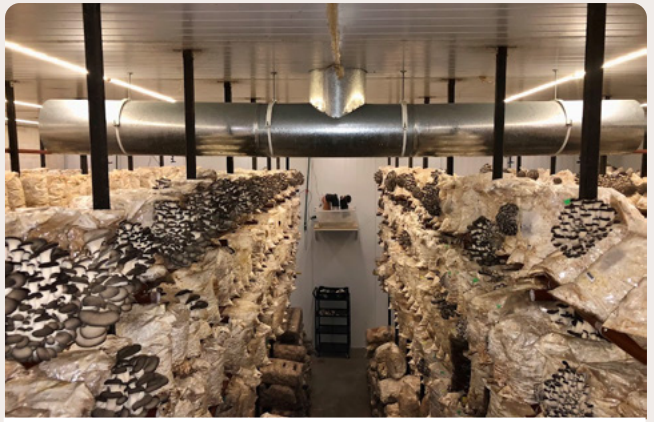
- Scale up PGPR applications and nanoparticle delivery
- Continue environmental monitoring (LCA, metagenomics)

2026:

- Host stakeholder workshop with European partners
- Finalise partnerships and replication strategy

Interest Groups

- Agri-food and biotechnology companies
- Sustainable farming and fertiliser developers
- Environmental services and metagenomics researchers
- International stakeholders
- Investors in microbial biotechnology and nanotech
- EU and Latin American networks



Mushroom trials took place on 2023 and 2024.
Photo: MarginUp! Consortium

About MarginUp!

The project is developing sustainable and circular value chains to produce bioproducts and biofuels from natural raw materials grown on marginal lands. By introducing climate resilient and biodiversity-friendly non-food crops on marginal and low-productivity lands, MarginUp! will increase farming system resilience, enhance biodiversity, and promote stakeholder participation.

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