Spanish Use Case: Cultivating in Dry and High Temperatures

Key Information:

Location: Finca La Orden-Valdesequera, Coria, Extremadura, Spain

Area: 15,000 hectares

Climate: Mediterranean

Bio-based products: Precast panels (hemp fibre) and biogas feedstock (Hemp dust)

Benefits:

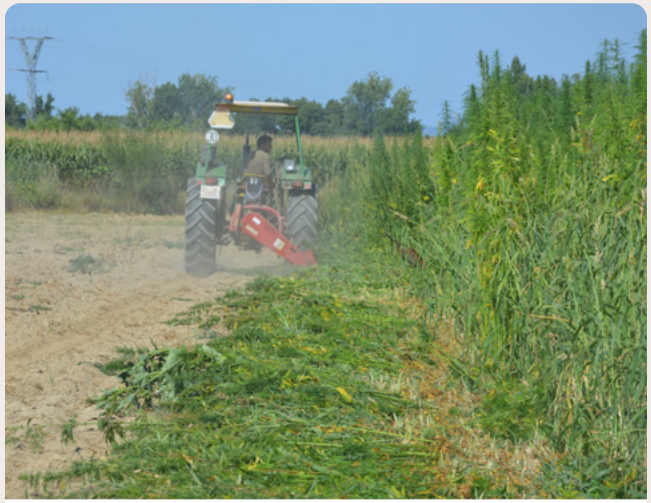
- Biodiversity enhancement
- Improved soil quality and productivity
- Circular use of biomass
- Water optimised production
- Replication potential
- New regional business models
- GHG emissions reduction

Main Challenges

It spans 16 municipalities in northern Cáceres, where corn cultivation on irrigated land has degraded soils, adding to low pH and organic matter content. Combined with high temperatures and low rainfall, these conditions make the land marginal.

Solution within MarginUP!

Improving soil organic matter and irrigation efficiency by integrating kenaf and hem—suited to high temperatures and low water availability—into existing crop rotations. Develop a value chain in which kenaf and hem are used to produce bio-based products, such as precast panels and biogas feedstock, while promoting soil regeneration.



Harvesting in the use case location. Photo: MarginUp! Consortium

Stakeholders Engaged

- Regional farmers groups
- Transformation factory (former tobacco facility)
- Modular System Global (precast panel partner)
- Local research and environmental organisations
- Public authorities
- Private companies (fibre processing and bioenergy)

Project's Timeline

2023:

- Cultivation of 0.1 ha of hemp and kenaf alongside maize, tomatoes, and peppers.

2023–2024:

- Initial fibre separation of hemp and precast panel prototypes developed.

2024:

- Characterisation of hemp dust for anaerobic digestion initiated.

2025:

- New trials of hemp and kenaf to obtain more reliable yield results.

2026:

- Economic evaluation of the entire value chain and market readiness of precast panels.

Interest Groups

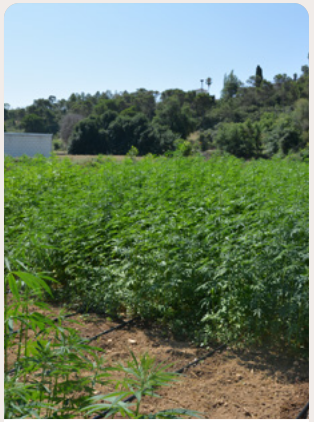
- Farmers in Mediterranean and drought-prone regions
- Construction sector
- Bioenergy and biogas producers
- Fibre transformation companies
- Biodiversity and ecosystem services experts
- Policymakers

Expected Results

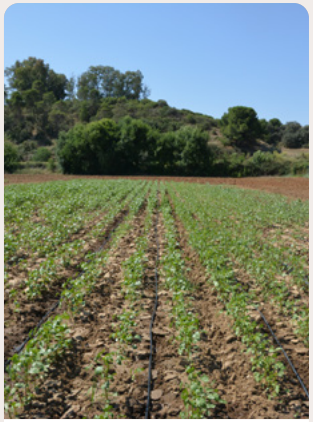
- Development of good agricultural practices for kenaf and hemp.
- Increased soil organic matter and reduced water use in crop rotations.
- Development of prototypes of precast panels using hemp fibre, and hemp dust use in biomethanisation.
- Economic feasibility study of the full crop-to-product chain.
- Assessment of biodiversity impacts from crop rotation changes.

Replication Potential

Replication potential in regions with similar climates and soils. Kenaf and hemp varieties can be adapted to local irrigation systems, while fibre processing and products can be tailored to regional markets—making it transferable across Southern Europe and beyond.



Hemp crop.
Photo: MarginUp! Consortium



Kenaf crop.
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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