

# Press release

## MarginUp! identifies marginal lands availability in Europe



Screenshot of the online maps depicting the Spanish use case on MarginUp! website.

The MarginUp! project has mapped the availability of marginal lands for low indirect land-use change (ILUC) biomass value chains in Germany, Greece, Hungary, Spain, and Sweden, as well as South Africa and Argentina. [MarginUp! partner RISE](#) has conducted research through desktop studies, interviews, and an experts' workshop, to produce maps depicting marginal lands in the projects' use cases and their respective stakeholders, using geographic information systems (GIS) technology. [The maps are available online.](#)

Marginal lands are areas with different limitations. The term is used to describe several types of unproductive or underutilised lands, from agricultural land in cold climate to decommissioned mines. Biophysical factors, such as soil quality and water availability, can be used to assess the suitability for different types of land use and assess its marginality. There is no clear definition of socioeconomic constraints when it comes to marginal lands, but there are several factors that are commonly associated with socioeconomic marginality, such as low income and lack of infrastructure.

The five [MarginUp! European use cases](#) with low ILUC biomass value chains include reed canary grass for erosion and protection panels in Germany, short rotations forest for Medium Density Fibreboard (MDF) in Greece, abutilon and willow Short Rotation Coppice (SRC) to produce oyster mushroom substrate in Hungary, hemp and kenaf for building panels in Spain, and turnip rape for biofuel in Sweden. In the South African use case, they focus on areas affected by invasive trees, and the Argentinian use case focuses on land salinisation.

The results from RISE's research identified the following **biophysical factors (BF) and socioeconomic constraints (SC)** as characteristics of marginal lands in the European use cases:

- Germany: high water levels (BF), land use conditions, lack of economic viability and stakeholder characteristics and engagement (SC).
- Greece: contaminants as heavy metals, organic compounds, and acid mine drainage (BF), high unemployment rate and poor infrastructure (SC).
- Hungary: high temperature and low humus content (BF), labour challenges and unknown market is larger than the younger (SC).
- Spain: low precipitation and low content of organic matter (BF), market challenge and low economic activity density (SC).
- Sweden: low temperature and short vegetation period (BF), proximity to the farm (long distances) and low population (SC).

## Online maps

With the aim of visualising marginal lands availability and relevant stakeholders involved in them, **MarginUp!** conducted a process of data collection and GIS-mapping that resulted in a set of [online maps](#). In terms of geographical scales, the project produced three different maps, one at the local scale for the pilot site, and two others at regional and national scales.

The German use case combined three biophysical factors, peat soil thickness exceeding 1m, groundwater level less than 1m below the surface, and the presence of grasslands, and the intersection of these variables was defined as marginal land. The Greek use case involved mapping lignite mines, both operational and shut down. Greece has committed to fully closing its lignite sector by 2028. In the Hungarian use case, MarginUp! mapped land classified as vineyards and orchards within the region.

In the Spanish use case, marginal land was defined as maize fields with yields lower than 12 tonnes/ha. However, in the maps, marginal land encompassed all agricultural areas within the regional boundaries, due to lack of more detailed data. In the Swedish use case, all agricultural land is classified as marginal land due to the heat sum reaching approximately 900°C days, which falls below the marginality threshold of 1500°C days. For the international use cases, only stakeholders were included in the maps.

The mapped marginal land and the associated biophysical and socioeconomic factors in the different use cases are based on regional and local know-how, opinions, and own experiences to a large extent, and not on research studies and other scientific material. There are also different levels of data availability between the countries when it comes to GIS-data.

## Barriers and opportunities

MarginUp! partners found that only a few studies have considered the role of socioeconomic factors in marginal lands. There is a need for more research that contemplates socioeconomic factors together with other factors that make a particular situation a marginal one, such as biophysical characteristics, environmental factors, ecosystem services, geographical location, agricultural structures, and political factors. **Quantifying the individual and combined impacts of all challenges is important for policy making on marginal lands.** This could eventually lead to the development of an analytical framework for the identification and assessment of marginal lands.

Besides the development of the online maps, to contribute to this end, **MarginUp! suggests coming up with a definition of marginal lands with clear criteria and a methodology that can be used for a sustainable bioenergy production.** Another solution can be providing sufficient and reliable data to develop models and calculate biomass yields. The obtained data on industrial crop growth and yields should be documented and made available, for example, on statistical databases of the [Food and Agriculture Organisation \(FAO\)](#). Moreover, studies are best suited to be performed on local and/or regional scale using a bottom-up approach and methods that take the complex nature of marginal lands into consideration.

\*\*\*ENDS\*\*\*

## Keywords

- Marginal lands
- Biodiversity
- Bioproducts
- Biomass
- Industrial feedstocks

## About MarginUp!

MarginUp! 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.

## Contact

**Dr. Philipp Grundmann, ATB**

Project Coordinator

[pgrundmann@atb-potsdam.de](mailto:pgrundmann@atb-potsdam.de)

**Marisol Castro Rey, Greenovate!**

Communication Coordinator

[m.castro@greenovate-europe.eu](mailto:m.castro@greenovate-europe.eu)

[www.margin-up.eu](http://www.margin-up.eu)

[@MarginUp\\_EU](#)

[MarginUp! EU](#)



Funded by  
the European Union

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or REA. Neither the European Union nor REA can be held responsible for them.