

Magic

Marginal lands for Growing Industrial Crops
Turning a burden into an opportunity

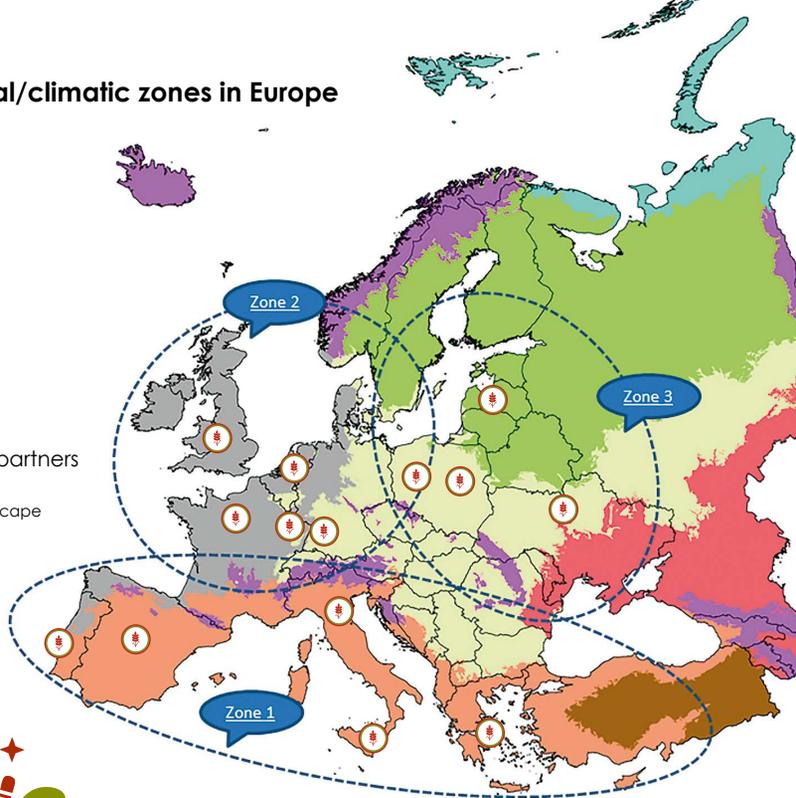


Major geographical/climatic zones in Europe

LEVEL 1 CLIMATE:

-  Arctic (K)
-  Boreal (B)
-  Atlantic (A)
-  Alpine (Z)
-  Mediterranean (M)
-  Continental (C)
-  Anatolian (T)
-  Steppic (S)
-  Magic consortium partners

Source: A new European Landscape Classification (LANMAP), Caspar A. Mücher, Jan A. Klijn, Dirk M. Wascher, Joop H.J. Schaminée



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BACKGROUND

Several studies agree on the existence of a considerable extension of land in Europe deemed less favourable for conventional agriculture.

This land has been either abandoned because of its productivity, or it is used as grassland. Moreover, contaminated soils cannot be used for food or feed production for sanitary reasons and thus provide great potential for the production of biomass for material or energy use. Cultivating industrial crops

on marginal land unsuitable for food production is consistently proposed as a viable alternative to minimize land-use competition for food production, and its adverse effects (direct or indirect) on food security, land based greenhouse gas emissions and biodiversity loss.

Industrial crops can be broadly categorised as:

- Oil
- Lignocellulosic
- Carbohydrate
- Specialty crops



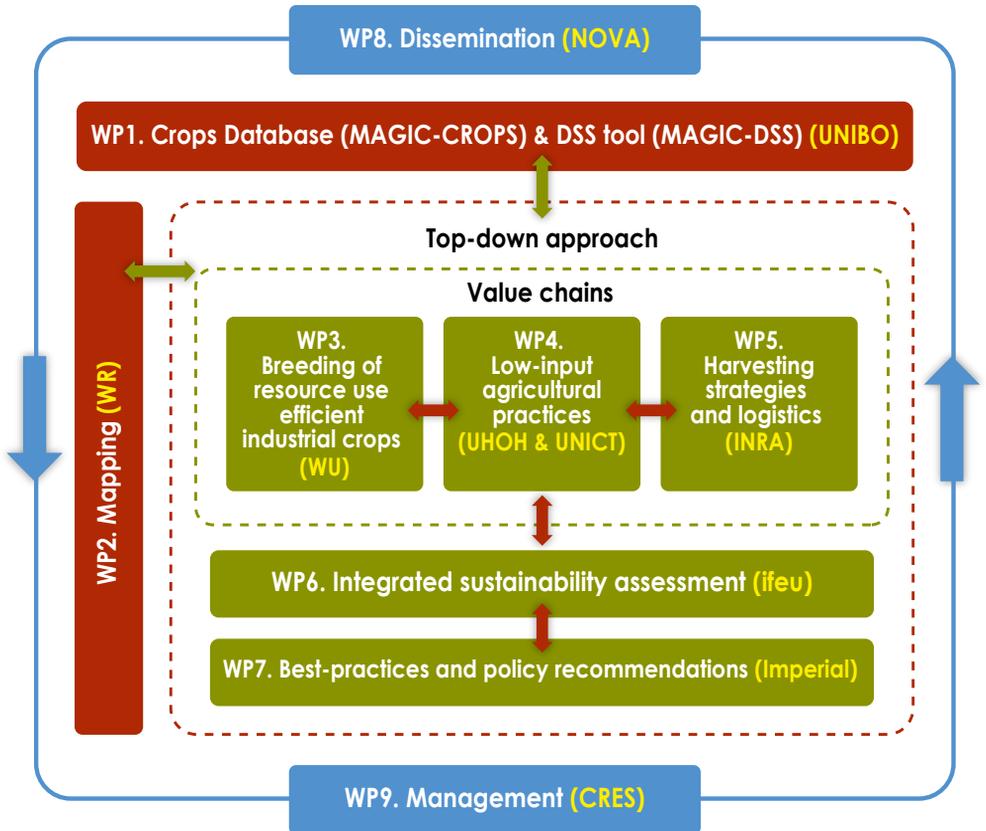
In this context, MAGIC aims to promote the sustainable development of resource-efficient and economically profitable industrial crops grown on marginal lands. To achieve that an up-to-date database of existing resource-efficient industrial crops will be developed with information on their agronomic characteristics, input requirements, yield performance and quality traits for end-user applications. In parallel, current and future marginal lands in Europe facing natural constraints will be mapped, characterized and analysed to provide a spatially explicit classification that will serve as a basis for developing sustainable best-practice options for industrial crops. A Decision Support System (DSS) based on MAGIC-CROPS and MAGIC-MAPS is being developed and validated with the active participation of farmers and end-users. The DSS gives them a quick and easy overview of the most productive industrial crops to meet the geological requirements of their soils.

KEY ASSETS OF MAGIC:

- It embraces the cultivation of selected industrial crops on areas facing natural constraints (e.g. extreme climatic conditions, low soil productivity, steep slope etc.).
- It ensures the production of resource-efficient feedstocks with low indirect land-use change, for a growing bio-based industry.
- It increases farmers' incomes through access to new markets and the revalorization of marginal land.
- It also includes contaminated and degraded soils, and reports the proportion of these land-types due to increasing human activities.

In the long term, this strategy will foster the sustainable development of the EU bio-based economy and will contribute to achieving EU energy and climate targets.

WORKPACKAGES OF MAGIC



The project comprises 26 partners, of which 42% are SMEs and large Enterprises and the remaining 58% are Universities and research Institutes. The research consortium is being managed by the Centre for Renewable Energy Sources and Saving Foundation (CRES).





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