

## Farmers and end users now benefit from a new database of industrial crops growing on marginal land!

**The European Union's Horizon 2020 project MAGIC has reached a milestone by uploading a beta version of its Decision Support System for farmers and end users, showing marginal land and an overview of industrial crops suitable to be grown on this land.**

The 4-year MAGIC project aims to promote the sustainable development of resource-efficient and economically profitable industrial crops on marginal land. Industrial crops can provide resources for high value-added products and bioenergy. This approach can strengthen the growing bio-based industry, help to mitigate competition in land use and increase farmers' incomes through access to new markets, as well as increasing the value of marginal land. In the first project period, a preliminary version of the decision support system providing access to three data sets (MAGIC MAPS, MAGIC CROPS and the MAGIC DSS) was developed.

### MAGIC CROPS

The dataset MAGIC CROPS contains information on existing resource-efficient industrial crops suitable for cultivation on different types of marginal land. Industrial crops can broadly be classified into oil, lignocellulosic, carbohydrate or specialty crops. Moreover, MAGIC CROPS provides information on agronomic management, input requirements, yield performance and quality characteristics for end user applications. For this purpose, the results of several long-term field trials with important industrial plants such as Miscanthus, Giant Reed, Reed Canary Grass, Camelina, Hemp and Poplar, which are carried out European-wide under the most important marginal growth conditions, are collected and evaluated in MAGIC. Many of these field trials are still on-going. In addition, the best low-input agricultural cultivation strategies for crop categories such as 'tillage', 'nitrogen fertilization', 'weed control' and 'irrigation' will be identified and made accessible over the next project years through MAGIC CROPS.

### MAGIC Decision Support System (DSS)

The MAGIC DSS combines both datasets and is designed to allow practitioners, policy-makers and the general public to gain access to information about marginal land and potential industrial crops across Europe. Information is provided at the NUTS3 administrative level. On the map, users can visualize the proportion of marginal land that is estimated to occur within each administrative unit and the main factors determining the marginal conditions. The individual marginal land types are depicted on a graph, as are the potential industrial crops and the amount of marginal land by country. As users explore the map, zooming in and out or select features, the graphs are updated in real-time. Clicking on any administrative unit on the map exposes the full database, which is also available for download. It is also possible to change the underlying base map to add for example satellite imagery. Additional features and an increase in information is planned for the future and all feedback is welcome.

The impact of the MAGIC project will be maximized by integrating sustainability aspects (covering environmental, social and economic aspects) of the value chains, which will serve as a basis for developing sustainable best-practice options for industrial crops growing on marginal land in Europe. The practitioners will benefit from the MAGIC results by implementing low-input agricultural practices for industrial crop cultivation, which are adapted to both the marginality conditions of their locations and to the market requirements in their region. 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.