CERESiS

Contaminat**E**d land **R**emediation through **E**nergy crops for **S**oil **i**mprovement to liquid biofuel **S**trategies

https://ceresis.eu

4 use cases

CERESiS DSS will be implemented in 4 real-scale projects in **Ukraine, Italy, UK** and **Brazil.**

Context

Land decontamination through phytoremediation, i.e. growing energy crops to produce clean biofuels.

Non-agricultural landbanks, including brownfield sites, former landfills and mining sites, such as Pb-Zn mines.

Heavy metals contamination at tailing sites of ilmenite sand mines, located within Zhytomyr region.

Agricultural farm area in Viterbo contaminated with As from historical use of pesticides.

Large agricultural areas with Cr contamination from tanneries waste used as fertilizers for many years.

Objectives

- Demonstrate the suitability and effectiveness of various conventional and novel species of energy crops for phytoremediation purposes in contaminated land, against a variety of the most common contaminants globally.
- Demonstrate the potential of two novel thermochemical processes, i.e. Supercritical Water Gasification (SCWG) and Fast Pyrolysis (FP), for the production of biofuels and key biofuel precursors suitable for further upgrading, from contaminated biomass.
- Provide decision support to stakeholders and policy makers in order to achieve optimal win-win solutions for site-specific land decontamination through phytoremediation while simultaneously producing clean liquid biofuels.

Output

CERESiS aims to influence policy makers and stakeholders with recommendations on how to support the incorporation of phytoremediation in biofuel production value chains. To this end, the project will develop a Decision Support System (DSS) and test it in 4 use cases (UA, IT, UK, BR). The DSS can be further exploited outside the scope of the project and propose optimal pathways (i.e. best choice of energy crops, most appropriate cultivation and harvesting methods, conversion and separation technologies and supply chain design) for each individual case of site, area, region or country.

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12 partners

8 countries

4 use-cases

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11/2020 start

4/2024 end