EUBCE 2024
32nd European Biomass Conference & Exhibition

EXPERT WORKSHOP
ENVIRONMENTAL SUSTAINABILITY OF CROPS FOR BIO-BASED INDUSTRIES IN EUROPE

Wednesday 26 June 2024 - 12.00-15.45 Room Samena

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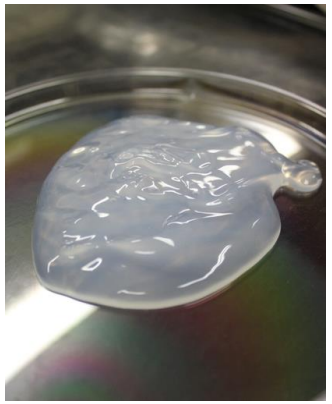
Question 1: Select the 1-2 types of primary crops used in industrial biorefineries producing bio-based chemicals, materials, products that you will present: what are the volumes or areas of such crop(s) in the EU and what are the uses (e.g., final products, intermediate chemicals, etc.)?

A Multipurpose Crop Bridging Phytoremediation with Sustainable Bioeconomy

Arundo donax L. (giant reed, Poaceae)

not cultivated on a large scale,
long term data - pilot fields, 17.6 - 36.5 Mg.ha−1.year-1, in medium fertility soils, and in marginal soils, yields can be reduced to values in the range 5.0 - 12.3 Mg.ha−1.year-1, dry matter

production of bioenergy, 2nd generation biofuels,
paper pulp, wooden building materials,
cascade of different bio-based products in a biorefinery scheme, such as nanocellulose (bionanocomposites, electronic devices, biomedical applications)



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Question 2: What are the main relevant environmental impacts related to the cultivation of the selected crops?

Giant reed

- Suitable to be grown in marginal and contaminates soils
- Perennial crops are effective in reducing soil erosion and building up soil carbon. The continuous ground coverage, the low soil disturbance, and the large rooting systems are reasons for this.
- Low nutrient leaching. The deep and well branched roots make that they hold large amounts of water and nutrients.
- Low need of nutrients
- Resistant to dry periods
- Biodiversity: provides shelter to animals, create landscape structural diversity.
- Can also deplete water resources through deep routing if scarce water availability

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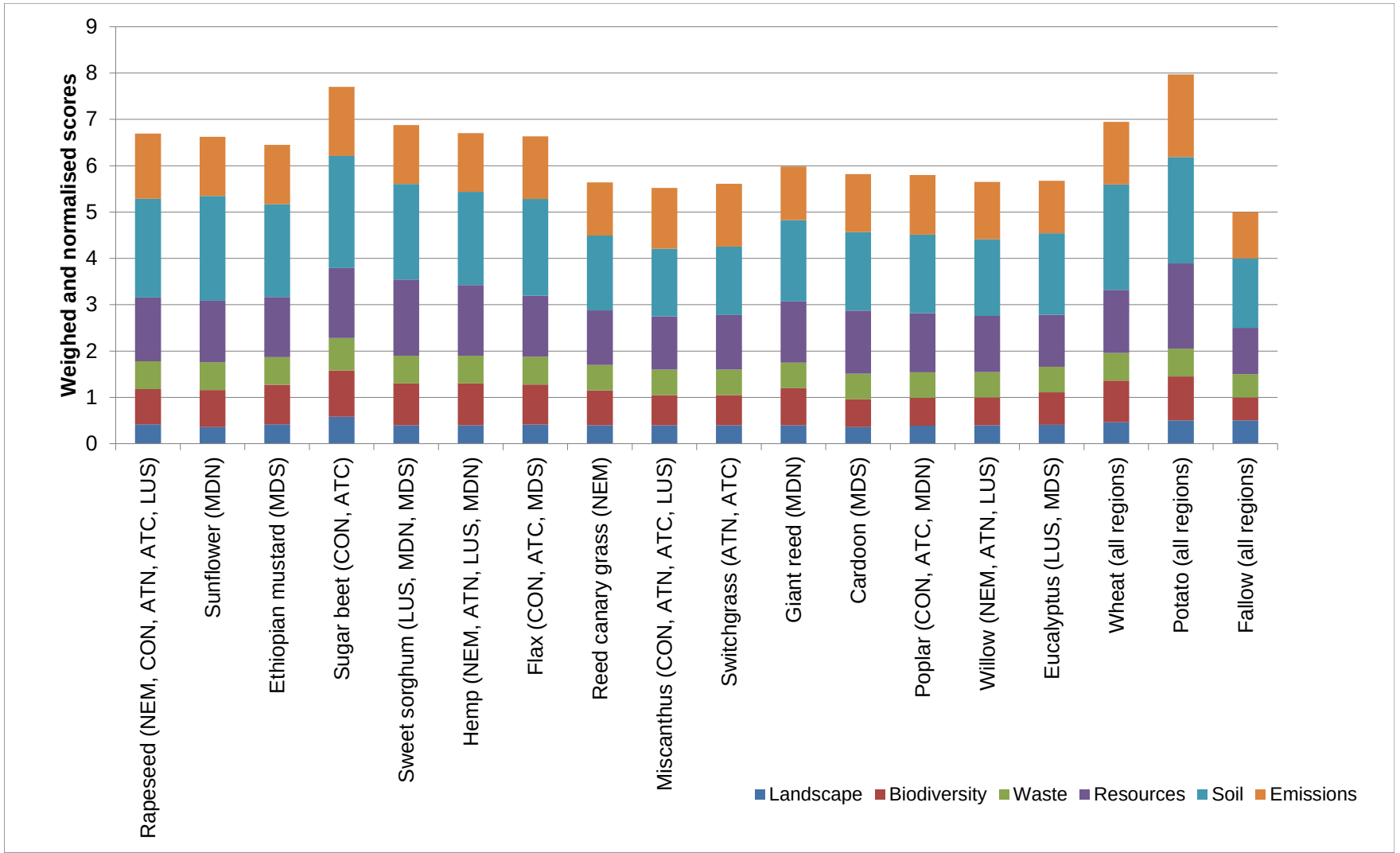

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Question 3 - What are the main 'best available practices/technologies' to grow such agricultural crops minimizing the impacts and maximizing the benefits for the environment?

- Grows on marginal lands that are abandoned or degraded, also in salinity soils
- established through rhizomes
- can be harvested with existing machinery
- Can be used to remediate wastewaters, leaching waters from motoways rich in hydrocarbons, and heavy metals
- It some regions has an invasive character
- not cultivated on a large scale yet

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