



SCAN ME

Soil carbon monitoring to create a pre-standard methodology for measuring carbon dioxide removal by artificial soils

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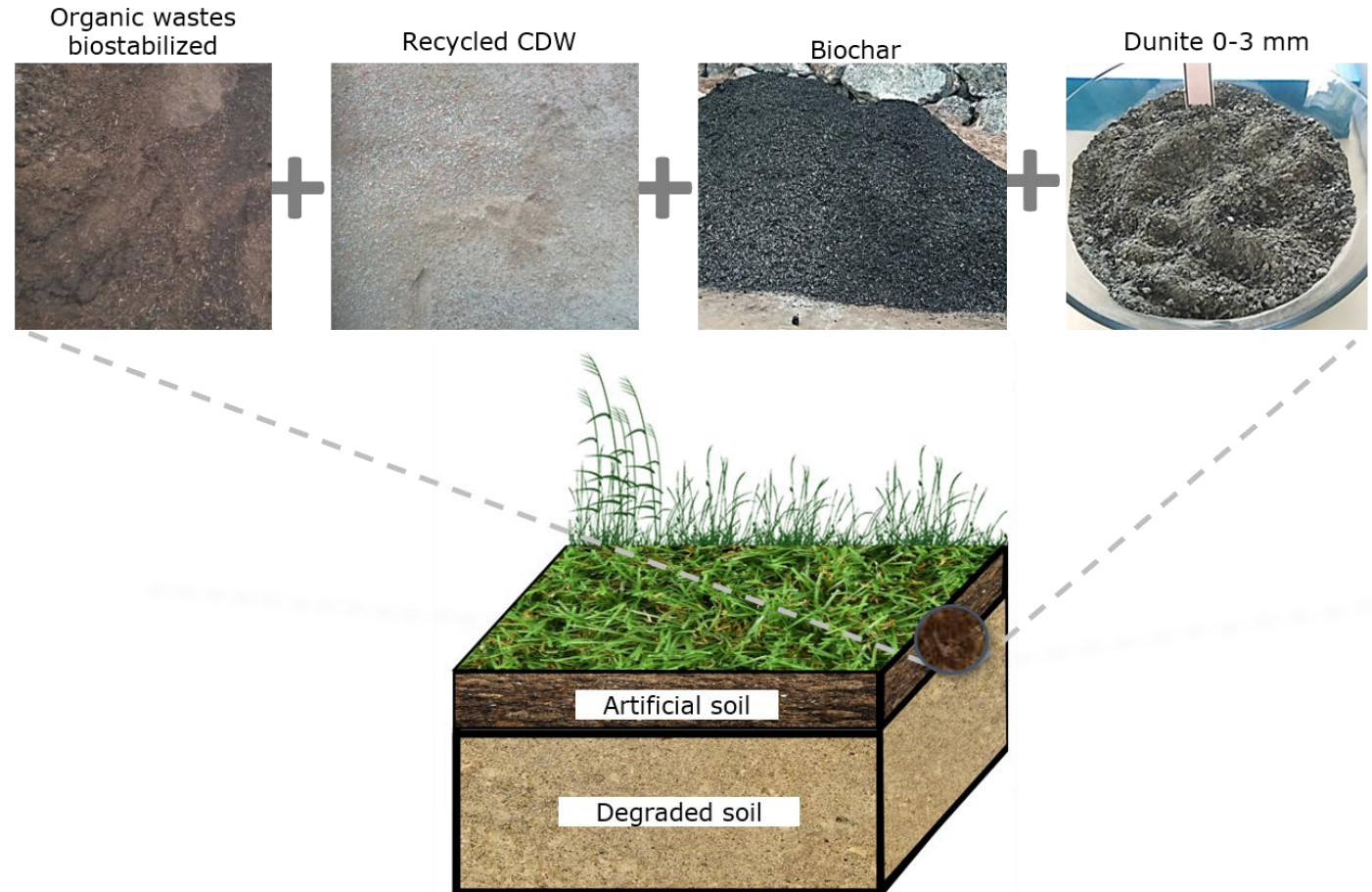
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ESA Symposium on Earth Observation for Soil Protection and Restoration

C-sink project: delivering data, information and pre-standards that can support a new or modified European regulatory framework with the capacity of providing high-quality CDR (carbon dioxide removal) technologies to the market.

7 technologies:

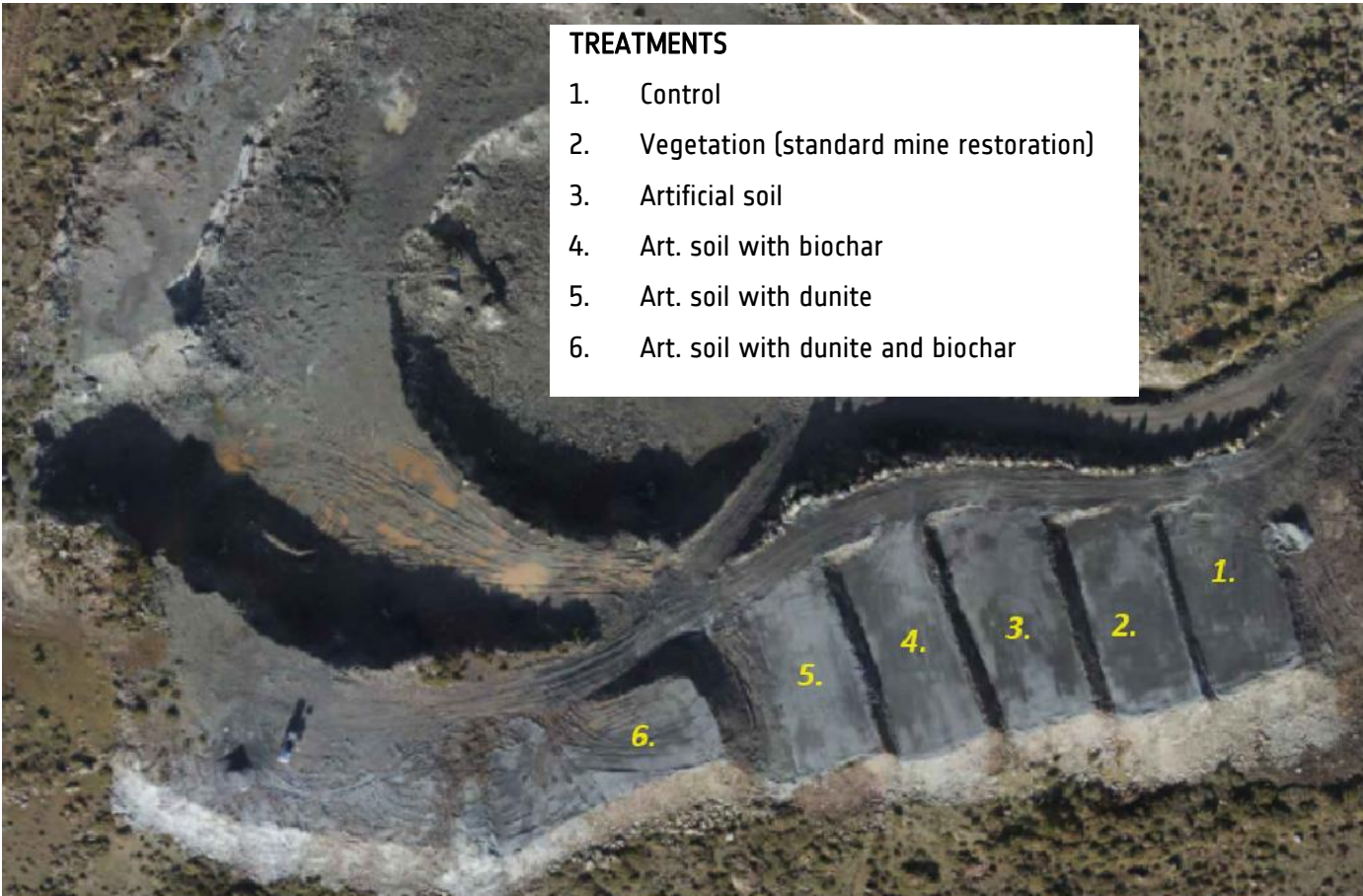
-  CO₂ fixation by plants and microorganisms (BCO₂)
-  Afforestation (AF)
-  Biochar (BC)
-  Artificial soils (AS)
-  Biochar with carbon capture and storage (BCCCS)
-  Bioenergy with Carbon Capture and Storage (BECCS)
-  Enhanced weathering (EW)



Experimental design of the field experiment in Pasek mine

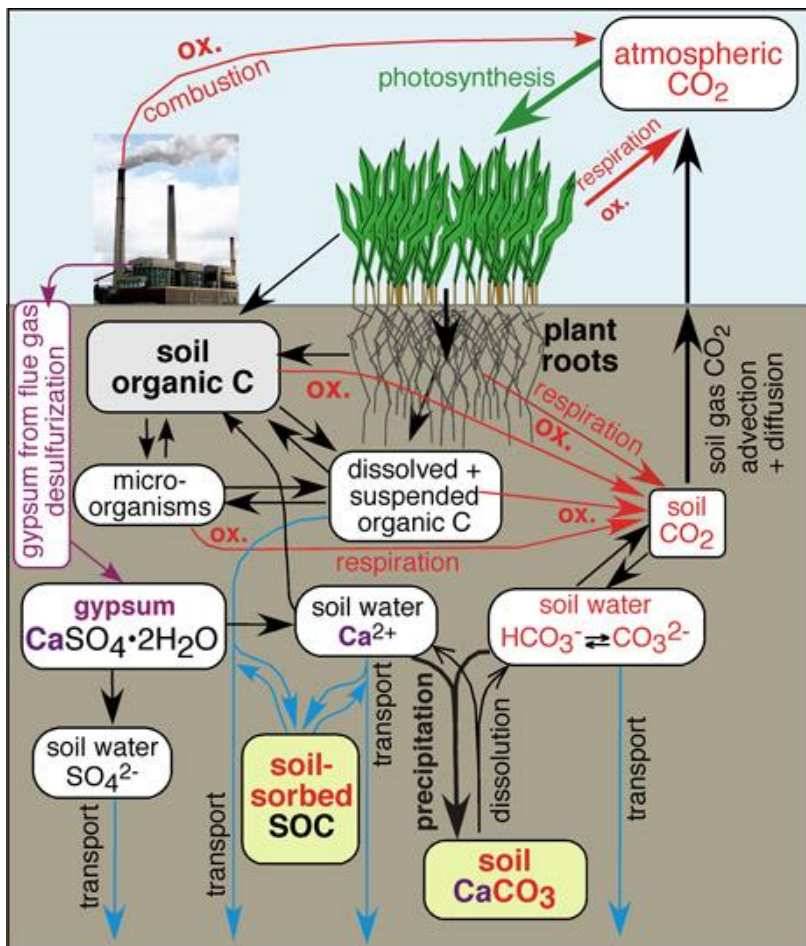
TREATMENTS

1. Control
2. Vegetation (standard mine restoration)
3. Artificial soil
4. Art. soil with biochar
5. Art. soil with dunite
6. Art. soil with dunite and biochar





CO₂ sequestration with artificial soils



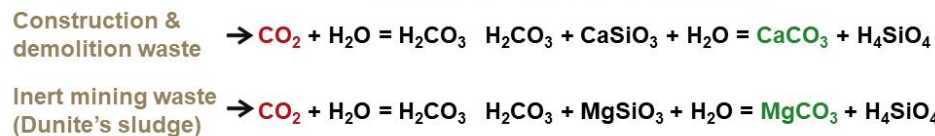
➤ CO₂ sequestration in inorganic form with artificial soils

Chemical reaction of CO₂ with CaSiO₃ and MgSiO₃



Brownfield land

CaCO₃
MgCO₃
forms
in soil



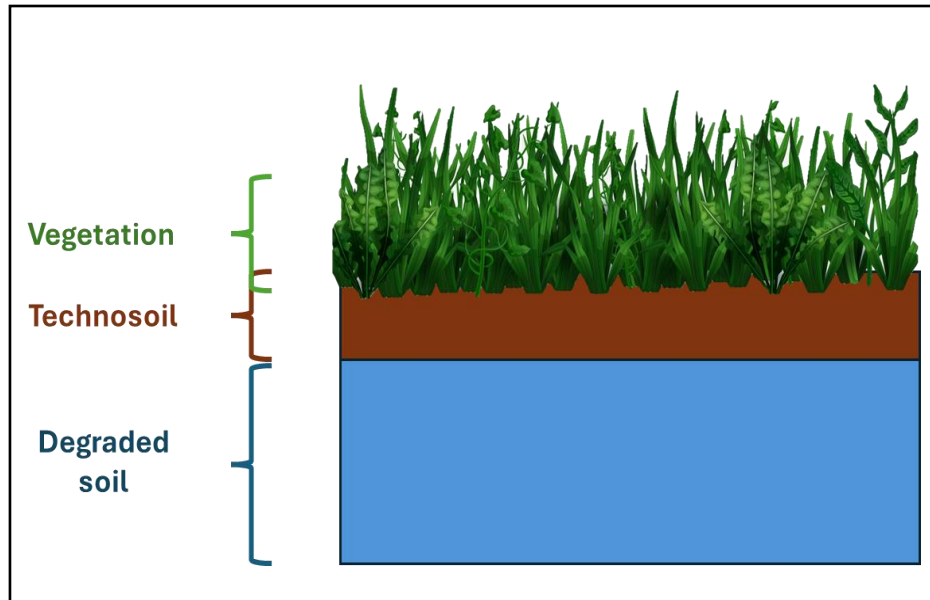
Tokunaga et al. 2011.

<https://earthsciences.typepad.com/.a/6a0133f32df47b970b0147e2998f68970b-pi>



CO₂ sequestration and soil health monitoring for 24 months:
12 months of wide list of variables + 12 months of selected variables (MRV demonstrative testing)

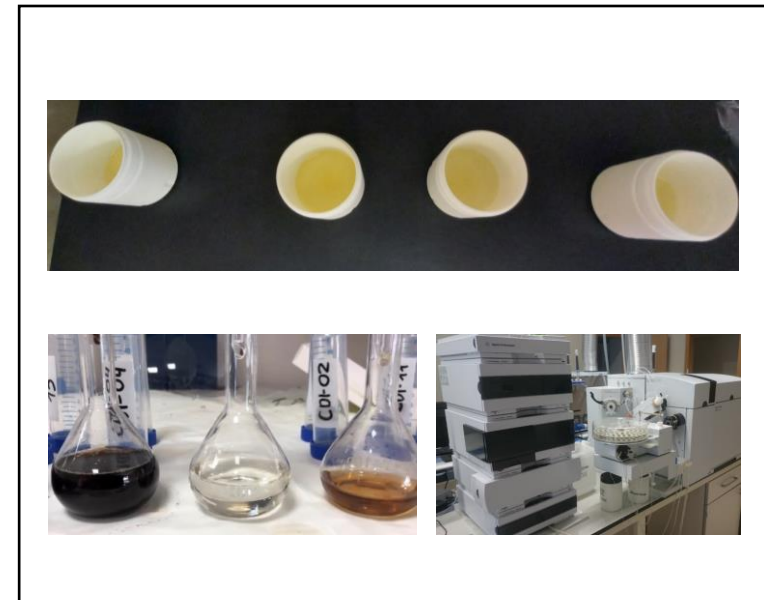
Scheme

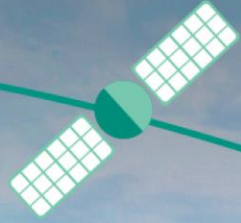


Field campaigns



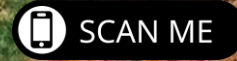
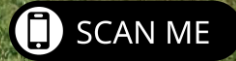
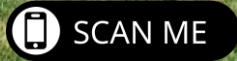
Lab measurements





THANK YOU FOR YOUR ATTENTION

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