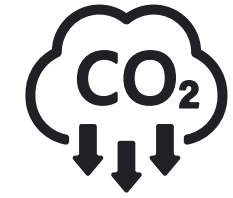
SOIL ORGANIC CARBON FACTSHEET 2.0

WHAT IS SOC SEQUESTRATION?

Carbon sequestration is the process of removing carbon (in the form of CO_2) from the atmosphere and storing it in sinks such as vegetation and soils permanently. Some management actions can increase sequestration of organic carbon in agricultural soils and contribute to mitigating climate change.



WHAT INFLUENCES SOC IN AGRICULTURE?

RAINFALL TEMPERATURE

Wet and warm climates

PREFERABLE TO

Variable rainfall/ drought/heavy rains

SOIL

Clay/Peat/Black

PREFERABLE TO

Sand/Sodic/Acidic

MANAGEMENT

Improved ground cover, reduced tillage, forages, crop rotation etc.

INITIAL SOC

What SOC are you starting from?

SOC eventually reaches saturation

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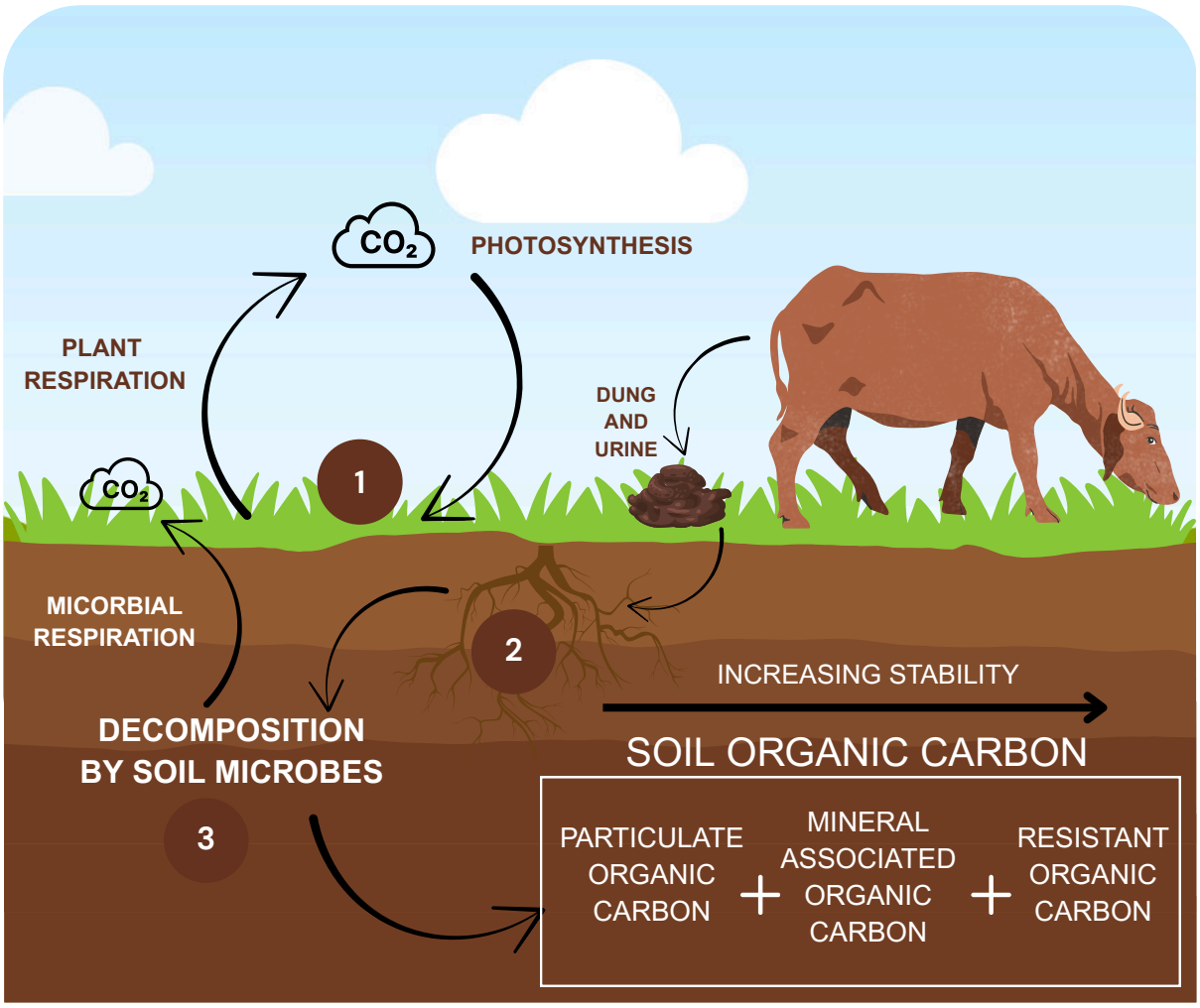
HOW DOES SOC SEQUESTRATION WORK?

1. Plants Capture Carbon: Crops and pastures take in carbon dioxide (CO_2) from the air through photosynthesis. This carbon is stored in their leaves, stems, roots, and seeds.

2. Carbon Enters the Soil: When plants shed leaves, die, or animals leave manure, this organic material adds carbon to the soil. Plant roots also release carbon-rich sugars into the soil to feed helpful microbes.

3. Microbes Recycle Carbon: Tiny organisms in the soil, like fungi and bacteria, break down organic matter. As they digest it, they recycle nutrients for new plant growth and release CO_2 back into the atmosphere while leaving some carbon as stable compounds in the soil.

4. Microbes bind to mineral particles: A proportion of plant carbon inputs are protected or stabilised from further microbial decomposition within the mineral soils, allowing SOC to remain in the soil for decades to centuries.



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