"From Climate Change to Nature Nurture" Maximizing Solar Energy to Regenerate Food, Farming, and Climate

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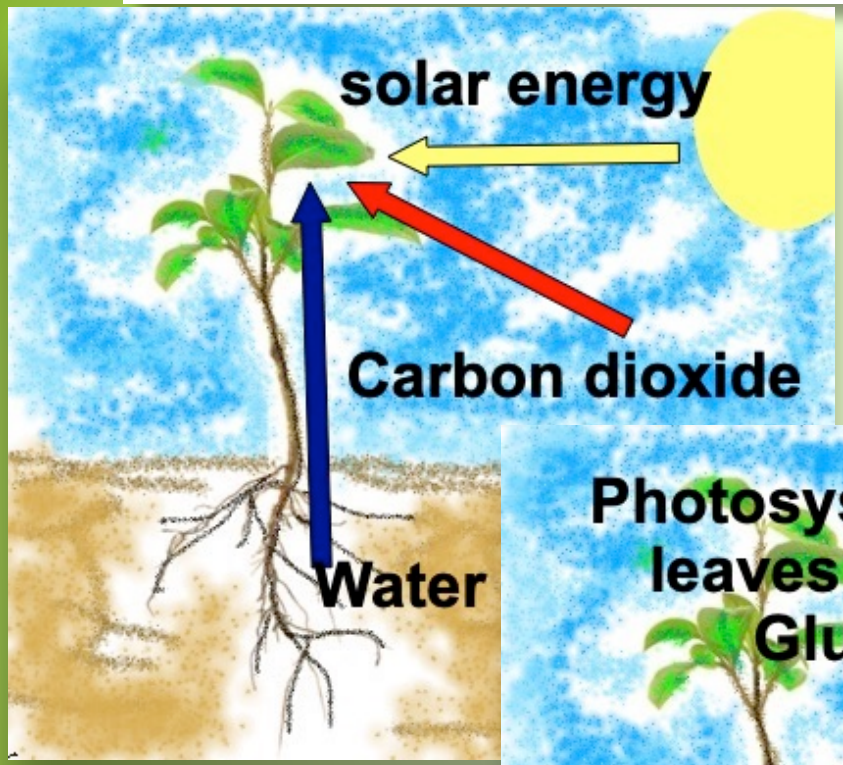
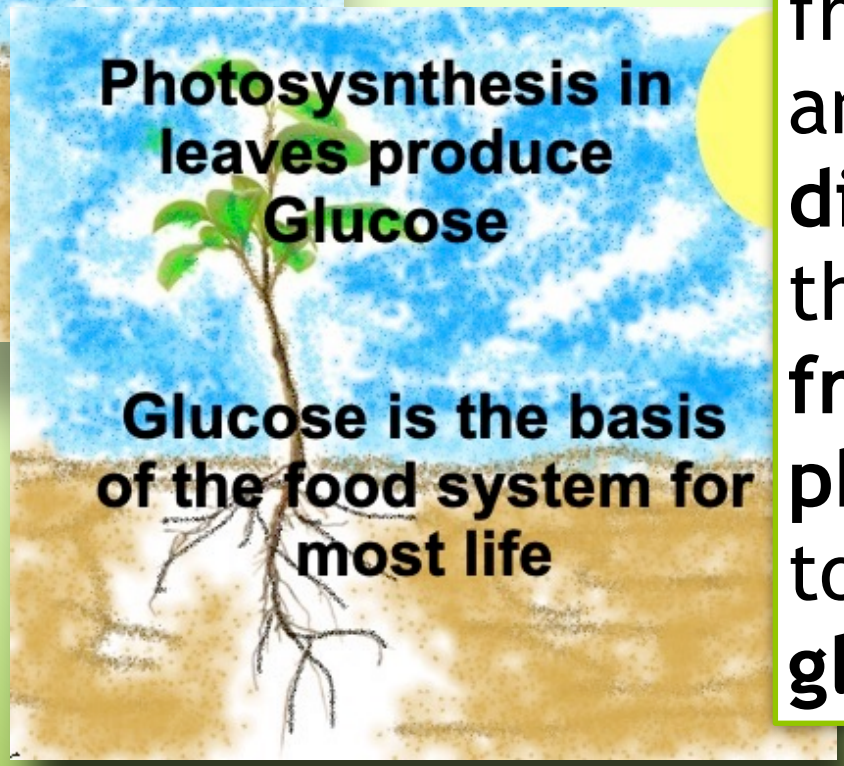
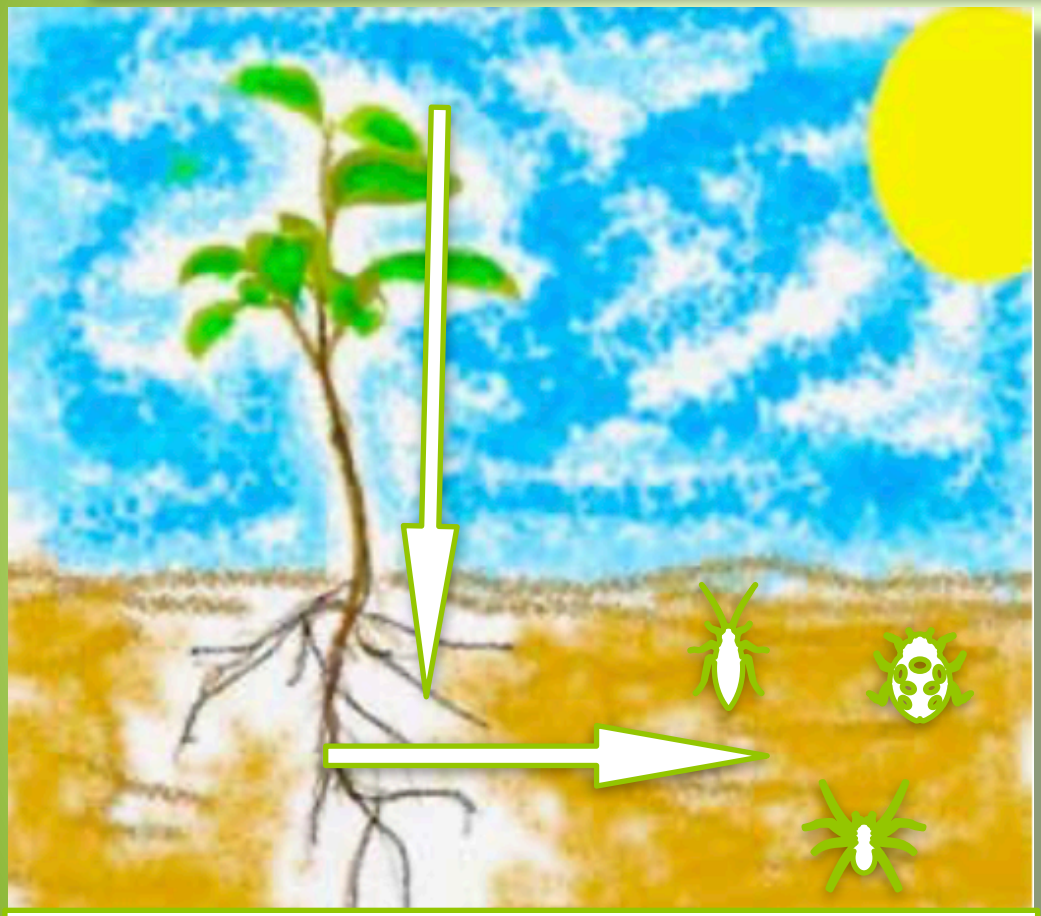
Plant Leaves
The Ultimate Solar Energy Collectors





95% to 98% of a plant's biomass comes from **water** and **carbon dioxide** using the **energy from photosynthesis** to make **glucose**

Maximize Solar Energy = Maximize Leaf Area



The soil microbiome is the region of Highest Biodiversity on the planet

Around 30 percent of the glucose/ carbon compounds are secreted through the plant's roots to feed the soil microbiome

This is called the liquid carbon pathway, or the "carbon gift"

Dead plants and bare soil do not photosynthesize
Only living plants produce the molecules of life

A Cover Crop - Using solar energy and biology to grow fertility

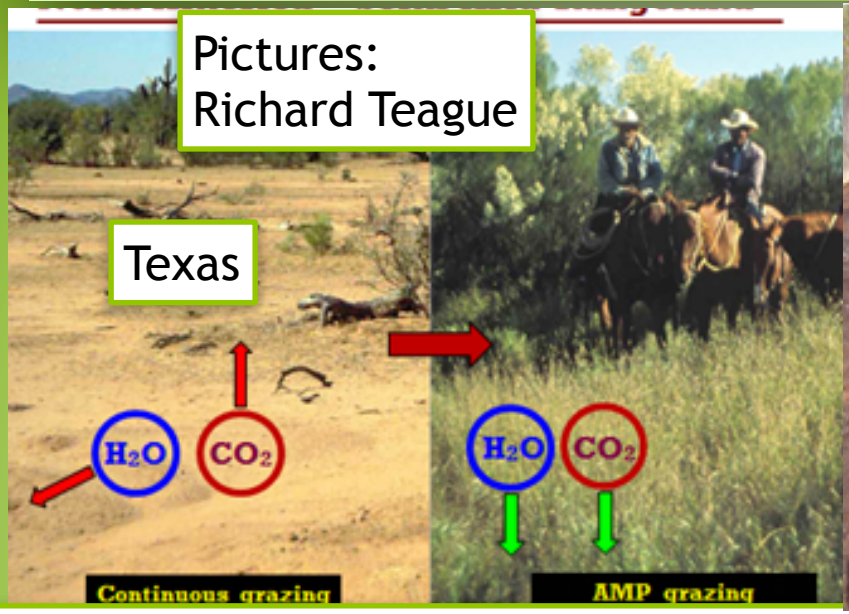
- Tropical perennial grasses and legumes in an orchard
- Provides nitrogen and large amounts of organic matter to feed the soil microbiome, improves soil fertility, and soil organic matter levels, sequesters CO_2 - to feed the cash crop

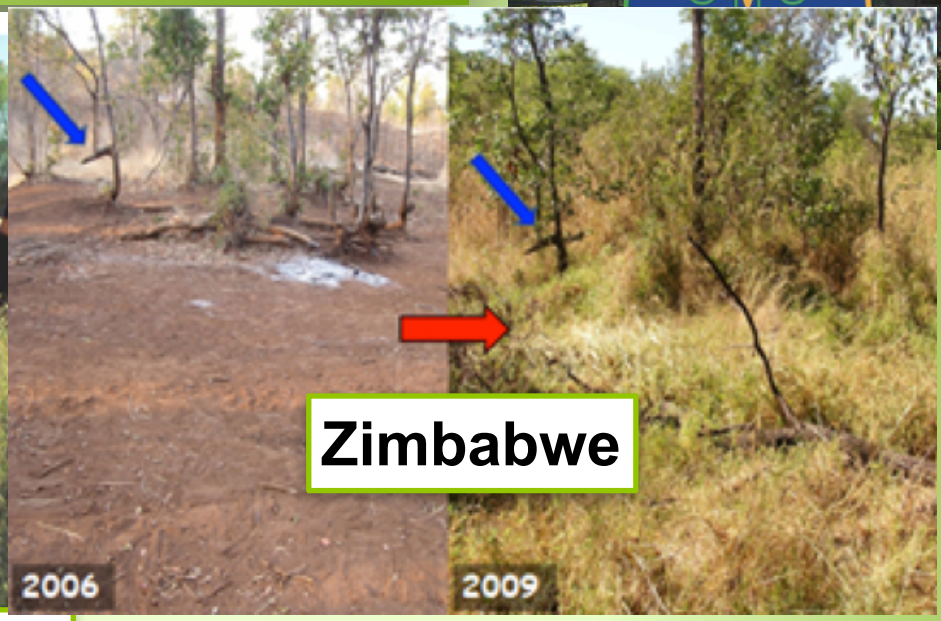
Regenerative Agriculture and Climate Change

Soil Kee, Australia

- Sowing annual cover and cash crops into perennial pastures
- 11.2 and 13 metric tons of CO_2/ha/yr Verified by the Australian Government Soil Carbon Initiative
- Extrapolated globally across agricultural lands would sequester 55 Gt of CO_2/yr
- Large increases in production

Regenerative/Holistic Grazing





- Regenerates degraded rangelands - 68% of Ag lands
- Increases biodiversity - plants and animals
- Improves water infiltration
- Increases stock carrying capacity
- Sequesters CO_2
- Biodegrades methane

Machmuller et al. 2015

- Sequestered 29,360 kgs (29.36 metric tons) of CO_2/ha/yr

If these grazing practices were implemented on the world's grazing lands, they would sequester 98.5 gt CO_2/yr

Why is policy change urgently needed?

We only need to transition a small proportion of agricultural production to best-practice Regenerative Organic Systems

- **Improve biodiversity and soil health**
- **Better water infiltration and efficiency**
- **Sequester enough CO_2 to reverse climate change and restore the global climate.**
- **Produce higher yields of healthy food with no toxic chemicals**

These are shovel-ready solutions!!!!!!!!!!!!!