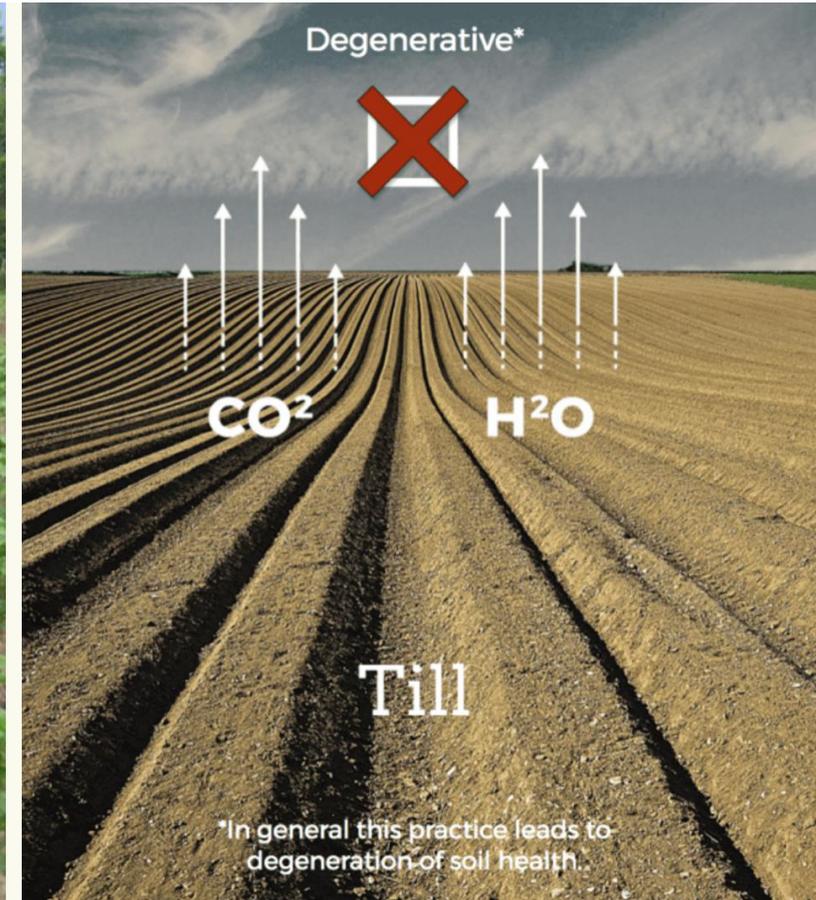
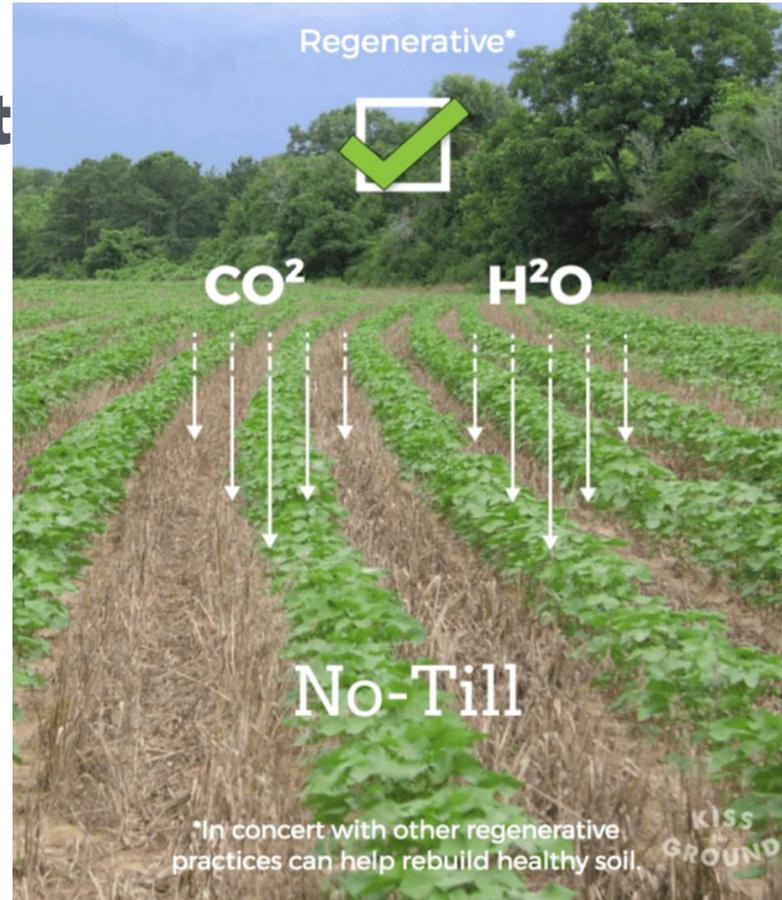


REGENERATIVE AGRICULTURE

The food security equation





Sven Verwiël – Technical Director at LEAF Africa

We believe that the future of African Agriculture lies in regenerative and integrated land use management.

Regenerative Ag pushes closed nutrient loops and maximum diversity; advocating the use of cover crops and zero till as well as the integration of animals, forestry & annual/perennial cropping systems.

A kind of farming that goes well beyond sustainability & the mere production of food.

www.leaf-africa.com



Kingdom of the
Netherlands

THE FOOD SECURITY EQUATION

Food Security = Soil Health + Carbon Capture + Human Innovation + Ecological Economies

SOIL HEALTH

(it has to start here) – the dream would be 100% of soil covered 100% of the time.

In 1 tsp of healthy soil = more life than humans on earth and up to 200m of fungal webs. This infinite underground ecosystem is ultimately responsible for creating nutrient dense food.

Soil health = people health. Right now 2/3rd of our global croplands are under 3 staple crops: rice, maize & wheat; highly calorific foods that are conventionally grown in broad acre, monoculture systems and contributing to our rapidly degrading soils – and deteriorating nutrition density of everything we put in our mouths.

Right now, 30% of the worlds' population is considered obese – anticipated to hit 50% by 2050 if we stick to this current trajectory.

We didn't acknowledge that our soils are alive till the late 90's – so no wonder it was never part of the conversation on food and fibre production & nutrition.





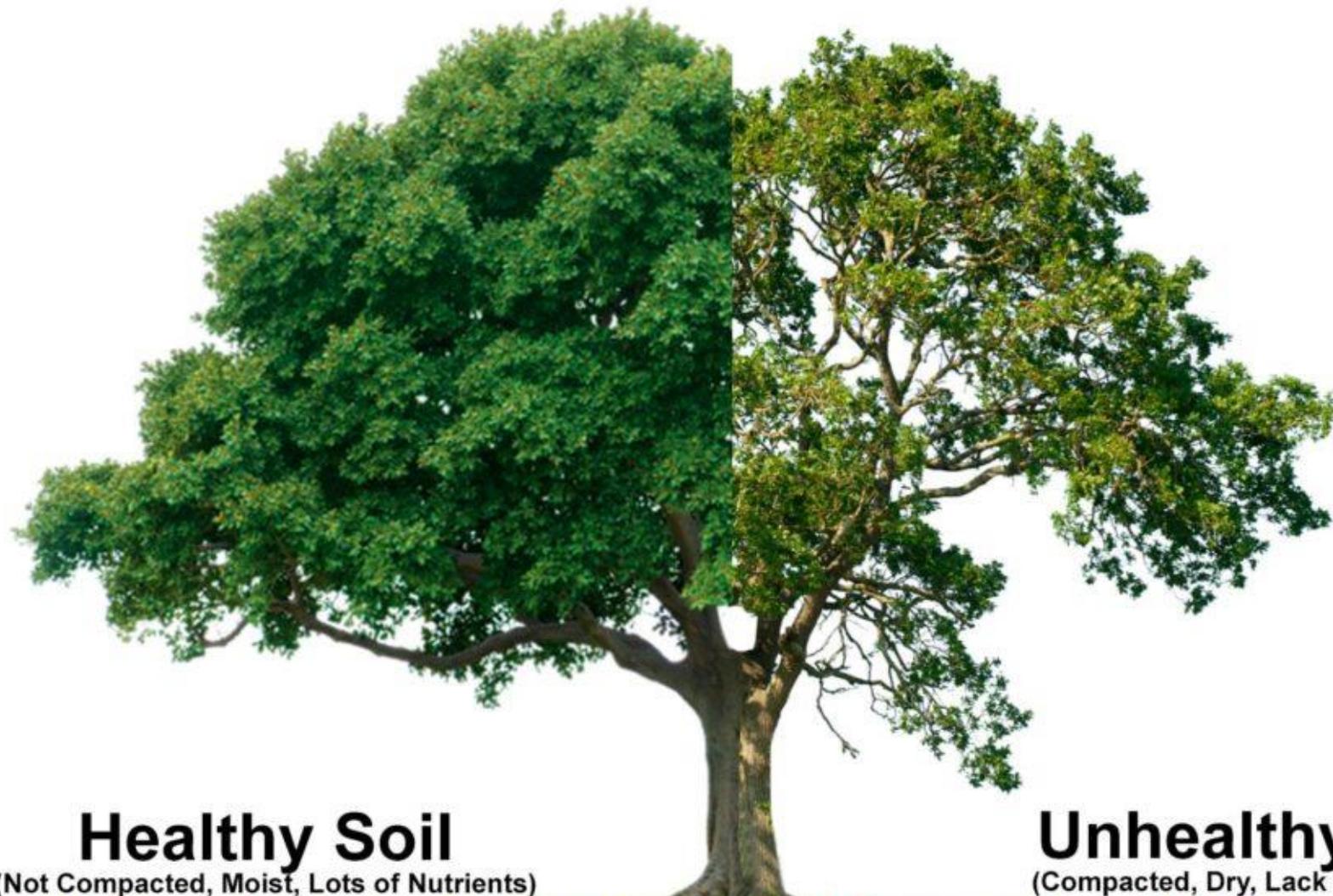
Healthy Soil: Cornerstone of Life

**Biological
Diversity**

**Food
Production**

**Water
Benefits**

**Carbon
Storage**



Healthy Soil

(Not Compacted, Moist, Lots of Nutrients)

Unhealthy Soil

(Compacted, Dry, Lack of Nutrients)



(SOIL) CARBON CAPTURE

Intrinsic to soil health is carbon. The single most critical issue facing our collective future. The specifics of the challenge it presents boil down to the fact that too much of it, once contained in a solid phase in the soil has now escaped into the atmosphere as a gas – where its causing havoc.

Plants are the only thing able to do this – drawing carbon out the air and into the soil through the process of photosynthesis where it fuels these vast living networks below ground.

Across the planets' 5 billion hectares of arable land, just a 1.6% increase in soil organic carbon would sequester the equivalent of 100ppm of atmospheric CO₂. This alone would render atmospheric carbon back to pre-industrial levels, whilst radically improving natural and production landscapes, human communities and our economies at the same time.

Regen. Ag works on making the soil one giant carbon sponge with every 1% increase in soil organic carbon able to hold approx. 166,000 liters per water / Ha in ANY soil type

Inextricably linked to soil health – human nutrition – yield improvement, ecosystem resiliency & climate stabilization.

Regenerative*



CO₂

H₂O



No-Till

*In concert with other regenerative practices can help rebuild healthy soil.

KISS
THE
GROUND

Degenerative*



CO₂

H₂O



Till

*In general this practice leads to degeneration of soil health.

HUMAN INNOVATION

Policy & legal frameworks (agricultural, educational, economics) – placing humans at the center of the ecosystem, not as a stand-alone entity.

This covers issue of:

- Mechanization & Infrastructure**
- Market access**
- Alignment & enhancement of the ‘free’ nutrient & hydrological cycles**
- Energy**
- Food sovereignty**

ECOLOGICAL ECONOMIES

Right now the economic system and the environment are at war. We are locked into a world fixated on a failing financial model that requires urgent and profound structural changes. What we need to do is tackle the irrationality of endless growth head-on, recognizing that capitalist growth — as measured by GDP — is not the solution to poverty and ecological crisis, but the primary cause.

= Green economies are the only way forward and there is a real and urgent push to developing them – but it's still in its infancy.

The problem with saving the world. Jason Hickel. 08.08.2015 <https://www.jacobinmag.com/2015/08/global-poverty-climate-change-sdgs/>

WHY aren't we doing this?

Because there's no capital gain to be had in creating lasting solutions.

We are told we have a choice between chemical/ GMO agriculture if we want to feed the world or watch children starve; whilst adopting organic agriculture is regarded as a romantic and sentimental pursuit. Really? What L.E.A.F. and other practitioners describe is a future that is in alignment with how life works, a scientific and sophisticated agricultural understanding of husbandry and biology that surpasses the productivity of industrial agriculture.

Remember: Nature has 4.3 billion years of R&D – and coupled with our own affinity for cutting edge technology we could make one hell of a team

"Nature uses for its metabolic processes approximately 3% of its capital in order to achieve a 10 to 15% surplus." This means, nature will always increase its energy (syntropy) since it produces more than it consumes.

Technology on the contrary will always tend towards energy depletion since to achieve the same surplus of 10%, a combustion engine, for instance, burns between 70-75% of its fuel energy, that is, it consumes more than it produces and will always need energy added to its system (entropy).

Syntropic Agriculture: the regenerative food-growing method that could reverse climate change and end hunger. Patricia Sendin.

<http://www.patriciasendin.com/2016/08/syntropic-agriculture-regenerative-food.html>







<https://www.tamalufarm.com/>