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From Local Soil to Global Stability: Biochar's Contribution to Food Security and Resilience

Transforming waste into value, building a sustainable future

The decrease of regenerative soil

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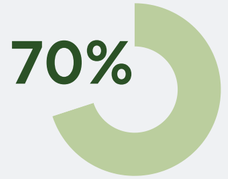
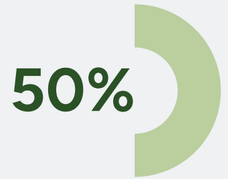
Environmental Urgency

Farmers in In Indonesia struggle with declining yields, making it harder to feed their families and earn a living.



of agricultural land is degraded due to unsustainable farming practices.



overuse of chemical fertilizers compared to recommended levels, accelerating soil degradation.

Human Cost

With declining yields, making it harder to feed their families and earn a living

Land Degradation

Soil erosion, nutrient depletion, and desertification reduce the land's ability to support crops.

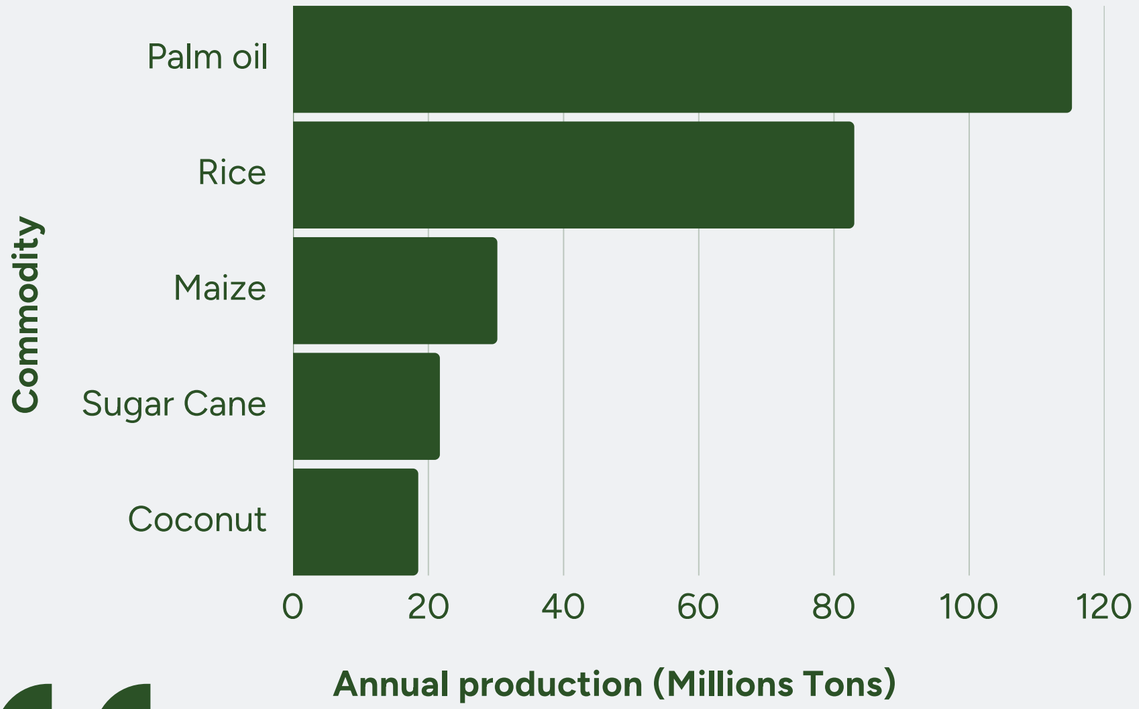
Water Shortages

Declining groundwater levels and unpredictable rainfall make irrigation more difficult, increasing dependency on costly alternatives.

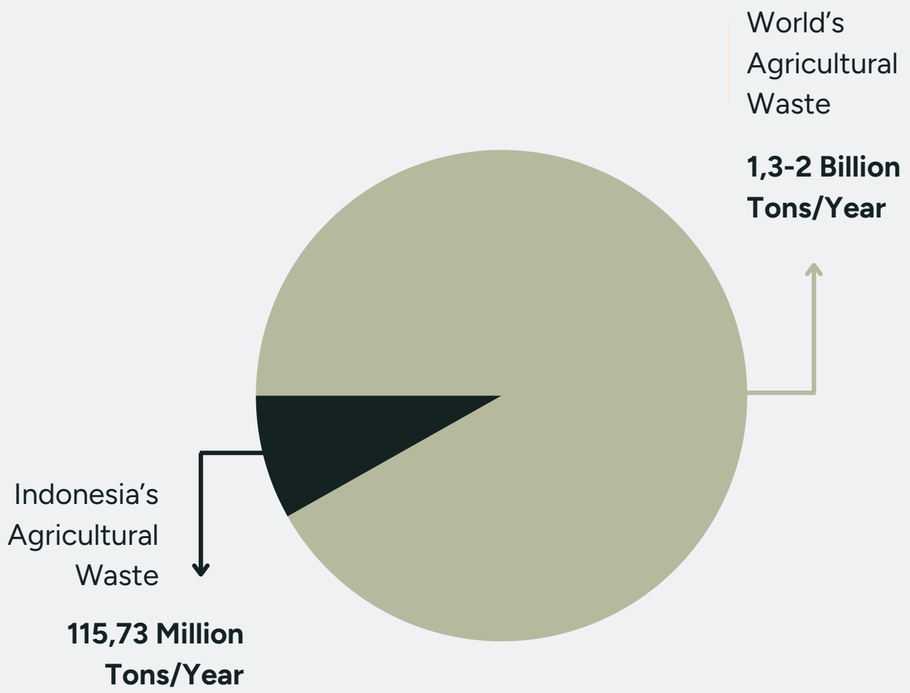
Income Instability

Crop failure due to climate shocks leads to financial insecurity and higher debt levels among smallholder farmers.

Study Case : Top commodity of Indonesia’s agriculture



Agriculture waste landscape



The unfinished loop in the farming practices, has left a huge amount of waste in the fields

THE SOLUTION

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Biochar for soil health, water use efficiency and climate resilience

Enhances soil's conditions and increase crop yields

Physical: Improves soil porosity, aeration, and water-holding capacity, increasing water use efficiency by 5-15%

Biochar improves water efficiency by 5-10%, retaining soil moisture and reducing irrigation needs

Biochar increases crop yields potentially by 20 - 30% thanks to improved soil health and plant vitality.

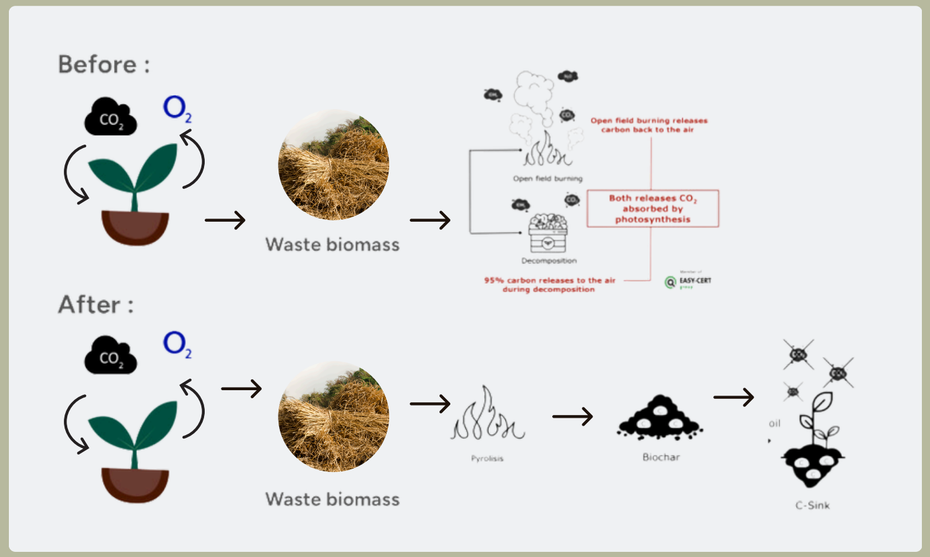
Biological: Provides a habitat for beneficial microbes, supporting microbial growth and activity

Chemical: Boosts cation exchange capacity (CEC) and **stabilizes soil pH** for effective soil remediation.

Biochar reduce chemical fertilizer needs up to 20 - 40% by enhancing nutrient uptake and retaining nutrients

Biochar optimizes fertilizer use, enhances soil health, conserves water, and reduces emissions. Providing a crucial stage for regenerative agriculture.

Biochar mechanism in Carbon Dioxide Removal (CDR)



Removes up to 3 tons of CO_2 per ton of biochar applied.

Objective with Carbon Standard International (CSI) to produce compliance based biochar

CSI as a foundation for compliance:

- Establishing standard procedures for managing raw materials through to end applications.
- Ensuring adherence to the permissible positive list for:
  - Technology and production processes
  - Product grade specifications
  - Application traceability

Carbon credit methodology standards:

- Carbon quality
- Emission
- Contamination
- Traceability

Field Trial

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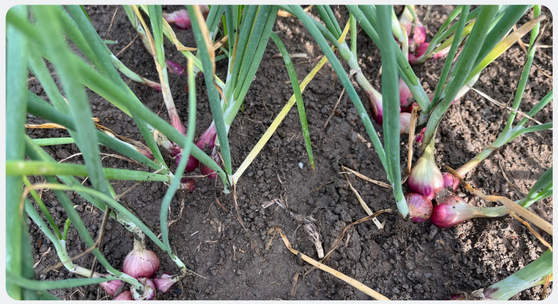
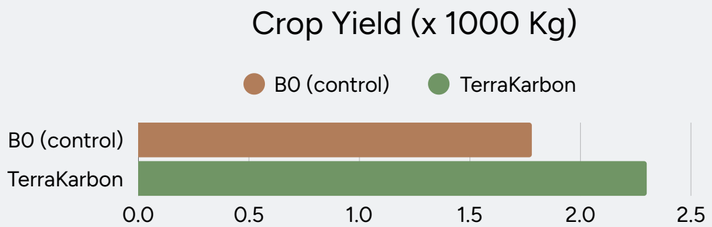
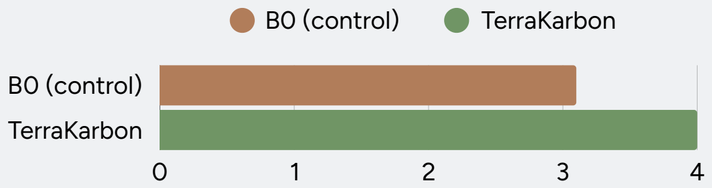
Shallots

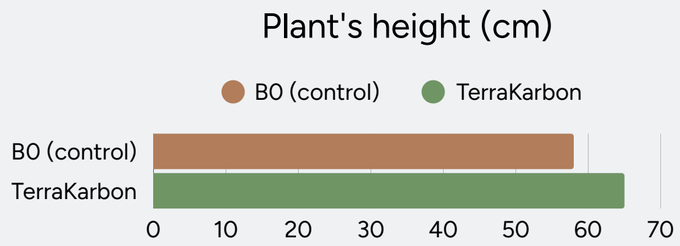


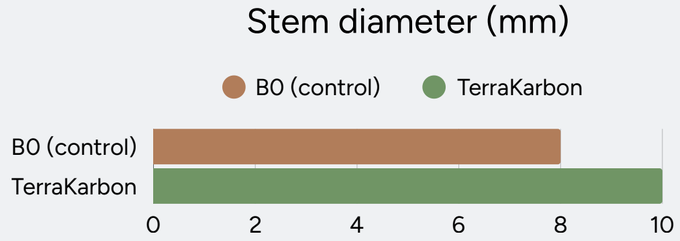




- **Increase crop yield**
- **Increase farmers income**

Chili





- **Better crop quality**
- **Better soil quality**

How we do it

Assistance and guidance to the community of biochar application and recommendation.

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Observation and reporting on before and after application of biochar.

We use best in class processing technologies.

We work with the best certification bodies to certify all our products and comply with the strictest methodologies to register the carbon removal units we generate.

Our strategy is to build a network of processing plants to locally process the agriculture waste and produce the best market fit Biochar products.

Our actions catalyzing the UN SDGs— a sustainable future for all

- **1 NO POVERTY** — Reduces poverty among rural farmers by boosting earnings through sustainable practices and improved yields productivity.
- **3 GOOD HEALTH AND WELL-BEING** — With YTPP, we aim to address WASH challenges within farming communities, focusing on reducing waterborne illnesses.
- **5 GENDER EQUALITY** — Empowers women farmers by providing training and leadership opportunities in biochar practices.
- **6 CLEAN WATER AND SANITATION** — Providing access to safe drinking water as well as the education on the importance of sanitary for community's well-being
- **8 DECENT WORK AND ECONOMIC GROWTH** — Creates economic opportunities for farmers and promotes resource-efficient and sustainable agricultural practices.
- **12 RESPONSIBLE CONSUMPTION AND PRODUCTION** — Encourages sustainable use of agricultural waste, reducing environmental impact & supporting regenerative farming.
- **13 CLIMATE ACTION** — Focusing on sustainable biomass management that reduce emissions, enhance carbon sequestration, & promote climate-smart farming.
- **17 PARTNERSHIPS FOR THE GOALS** — Making partnerships with experts to ensure impactful and integrated results.

Our commitment to revitalizing soil health

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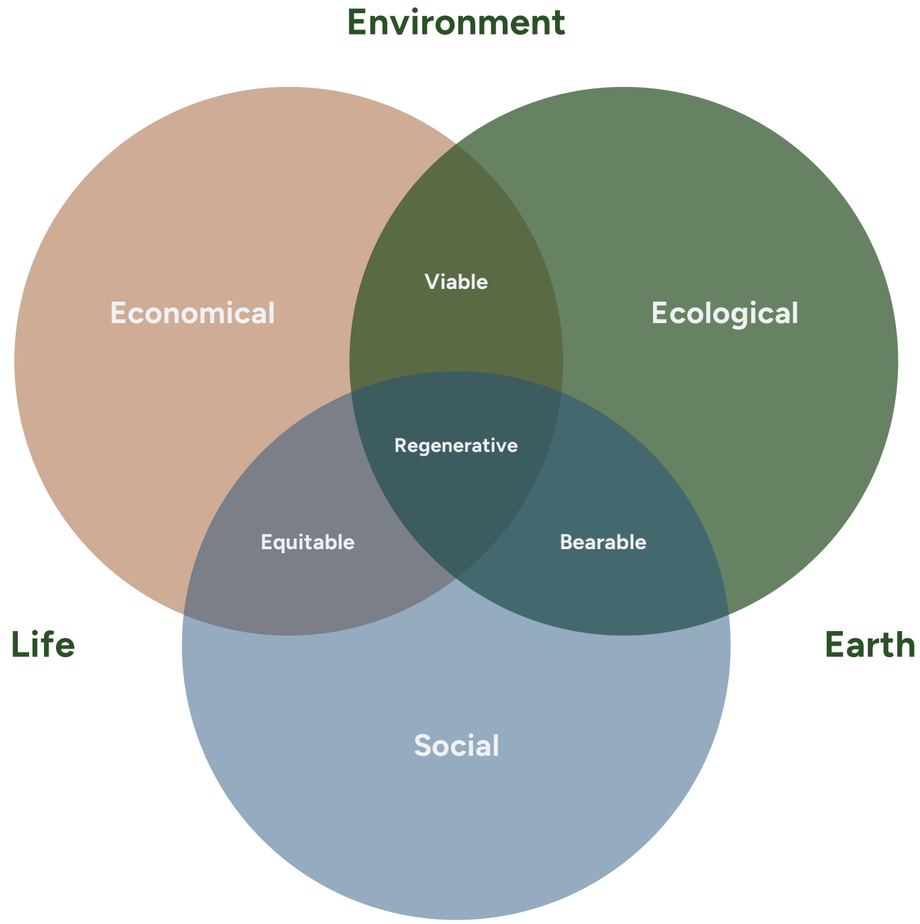

- Adapting the concept of circular economy
- High-integrity, full-transparency carbon removall
- Uplift community, allowing access and opportunity in education and economy

Bringing soil back to life, a powerful solution for regenerative agriculture.

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Thank You

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