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TAKACHSR

Technology. Equity. Environment.

Co-founder & CEO
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Problem & Opportunity

More than **USD 120 billion/year** of crop & forest residues is burned in the open worldwide

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Farm fire as viewed from space NASA, 2013

Logistical Challenge



Our Solution

Upgraded, dense, carbon rich feedstock.
Significantly lower logistics costs.



Fertilizers
(\$30B/year)

Activated
carbon
(\$6B/year)

Biofuels
(\$90B/year)

Specialized
Chemicals
(\$15B/year)

Can be powered by batteries/solar panels



Our design simplifies the reactor and makes it flexible



Takachar system

Room temperature air

2-20 tons/day input

All kinds of crop residues

Process-controlled as per end use application

Can process vast variety of biomass like:



Rice Straw



Rice Husk



Coconut Shell



Walnut Shell



Wood Chips



Pine needle



Mustard husk

Pollution Control

Our technology reduces particulate matter, volatile matter and CO emissions by $> 95\%$
(Kung, 2017) as compared to open burning of crop residues



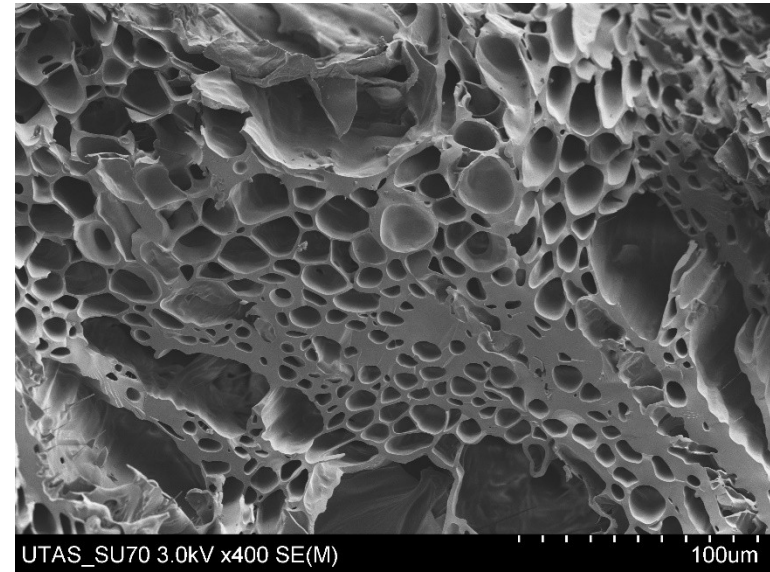
a. Status quo conversion



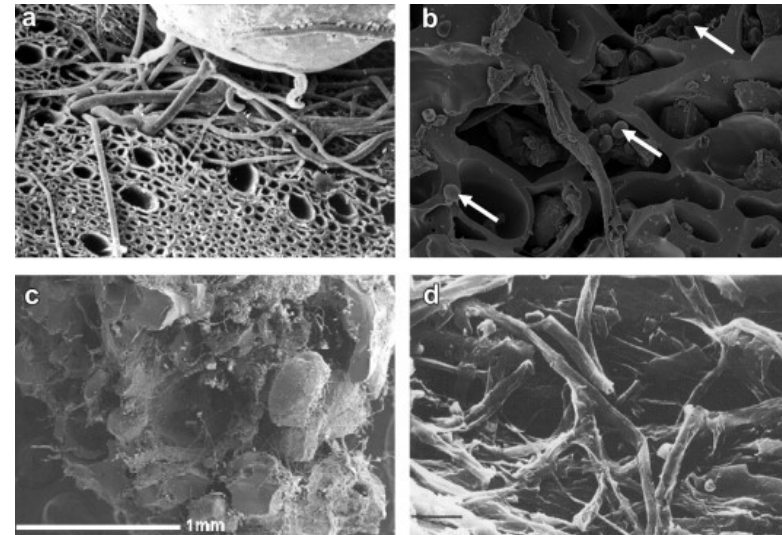
b. Our technology

Biochar makes soils better!

And sequesters carbon in the soil on a 1000 year time scale!



Dr. Jocelyn <http://biocharproject.org/charmasters-log/biochar-electron-microscope-images/>



Carbon Negative Fertilizer

At the same price that farmers pay for their fertilizer inputs per season per hectare:

- We increased their yields on average by up to 27%**
- We increased their net income by up to 50%**
- Carbon removal**
 - 370 kg/acre of CO₂-e removed**
 - 730 kg/acre/season CO₂-e avoided**

Actual Impact to Date



15,000
farmers



USD 1 million
added rural
livelihood



15,000 tonnes
waste recycled



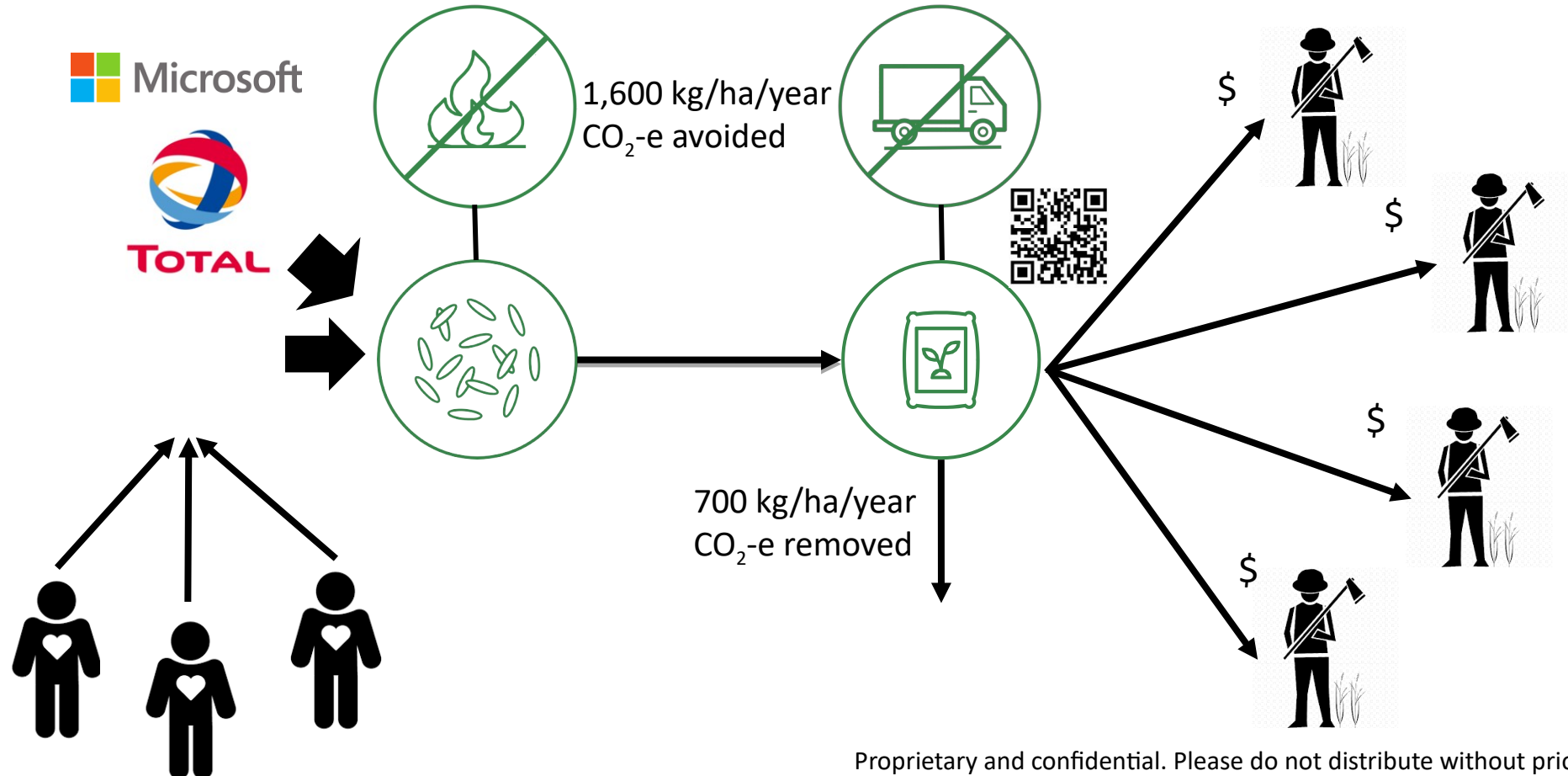
25,000 tonnes
CO₂-e removed

Carbon removal and climate justice

By sequestering carbon-rich fertilizer blend into the soil, we have potential to remove ~ 2.4 GT/year CO_2e .

By reducing open-air biomass burning and chemical manufacturing/transportation, we avoid ~ 5.6 GT/year CO_2e .

Furthermore, our real-time control system uniquely advances climate justice by enabling rural, underserved communities verify and earn carbon credits for the first time.



Recognition



Breakthrough Energy
Fellows



XPRIZE
CARBON
REMOVAL

ELON MUSK

THE
EARTHSHOT
PRIZE



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