



ENHANCED ROCK WEATHERING : GEOGRAPHY

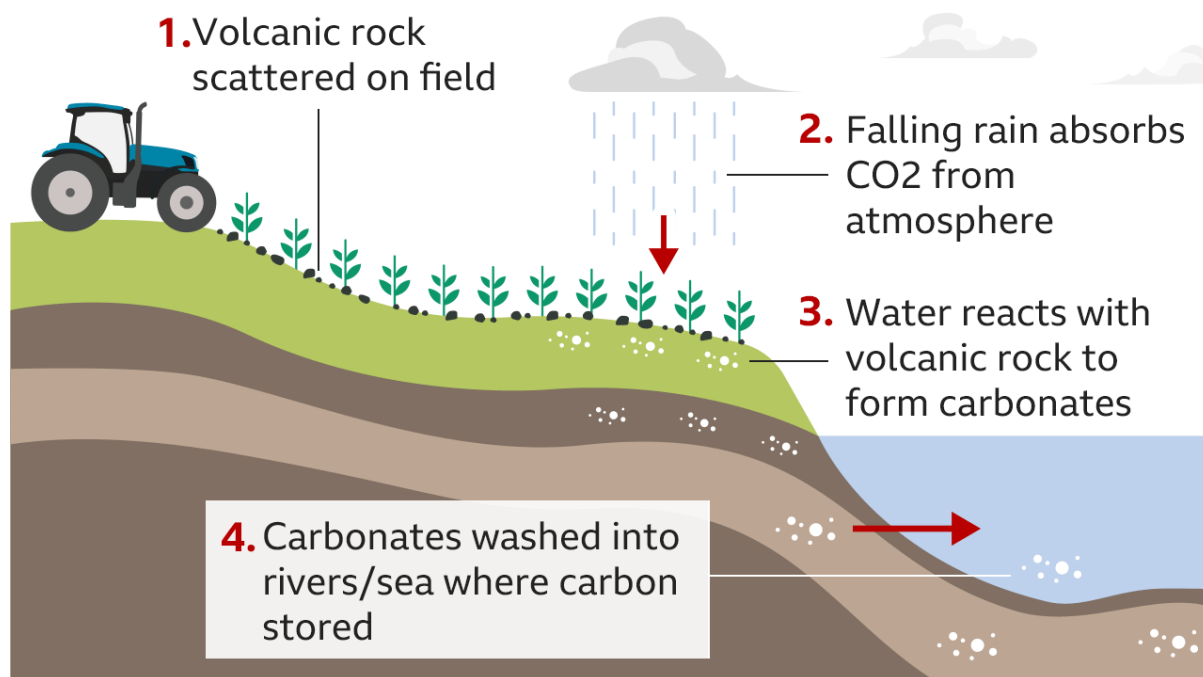
NEWS : Company uses mining dust to enhance carbon capture

WHAT'S IN THE NEWS ?

Alt Carbon, a Darjeeling-based company, is pioneering a surprising climate-friendly solution using dust from mining and has already secured \$500,000 in investments from carbon-credit companies. The company's approach is based on the geo-chemical process called rock weathering, which accelerates natural carbon sequestration.

Enhanced Rock Weathering (ERW) and Alt Carbon:

How enhanced rock weathering works



Natural Rock Weathering:

- Over time, rocks break down into minerals due to exposure to rain and heat.
- Atmospheric carbon reacts with minerals like calcium and magnesium, forming bicarbonates stored in oceans for millennia.
- Oceans capture 30% of CO2 from human activities.

Enhanced Rock Weathering (ERW):

- **Process:** Accelerates natural rock weathering by spreading finely ground silicate rocks (e.g., basalt) to remove CO2 from the atmosphere.
- **Benefits:** Carbon sequestration, improved soil pH and fertility, reduced ocean acidification.



- **Challenges:** High energy requirements, heavy metals, limited availability of rocks, logistics, and crushing costs.

Alt Carbon's Carbon Capture Initiative:

- Basalt-rich regions in India: Maharashtra, Gujarat, Jharkhand, and West Bengal.
- **Process:** Alt Carbon collects crushed basalt from Rajmahal mines, spreads it on tea estates in Darjeeling, improving soil and sequestering carbon 10-100 times faster than natural weathering.
- **Results:** 3-4 tonnes of basalt dust sequester 1 tonne of carbon in 2-4 years.
- **Carbon Credits:** Alt Carbon has agreements with Frontier and NextGen to sell carbon credits based on carbon sequestration.

Challenges and Future Plans:

- Variability in carbon sequestration measurements across projects.
- Dr. Sambuddha Misra developed the FELUDA protocol to standardize measurements.

Source: <https://www.thehindu.com/sci-tech/energy-and-environment/company-uses-mining-dust-to-enhance-carbon-capture/article68773354.ece>

