



# Farming with Rocks: Policy Priorities for Enhanced Rock Weathering

## Executive Summary

### Overview

Enhanced rock weathering (ERW) is a promising durable carbon removal and land management solution that involves spreading finely crushed alkaline rocks onto fields. By speeding up the natural weathering process of rocks, ERW can absorb CO<sub>2</sub> from the atmosphere and durably store it for millennia. Carbon dioxide removal (CDR) solutions like ERW are essential for achieving mid-century climate targets. ERW has the dual potential to reach the gigaton scale of carbon removal annually while addressing widespread soil acidification concerns.<sup>1</sup>

The agricultural sector contributes 26% of global greenhouse gas emissions, and balancing decarbonization with the need to feed a projected 9.7 billion people by 2050 is a significant challenge.<sup>iii</sup> Farmers, ranchers, and forest landowners must be included in global climate discussions to ensure the practicality of proposed solutions. Practices to mitigate agricultural emissions or increase CDR via agricultural systems must sustain—and ideally improve—the health and productivity of these systems.

To date, ERW has been deployed across more than 20,000 hectares (50,000 acres) on four continents, with leading catalytic carbon removal buyers like Frontier, Google, Microsoft, and NextGen having signed multi-million dollar agreements to purchase tens of thousands of tons of CO<sub>2</sub> removal through the end of the decade.<sup>2</sup> Public sector support for ERW is also growing: the U.S. Department of Energy has awarded \$16 million to four ERW pilot projects, and Horizon Europe—the EU’s research and innovation funding program—has provided approximately €450,000 to ongoing ERW research projects.<sup>3</sup>

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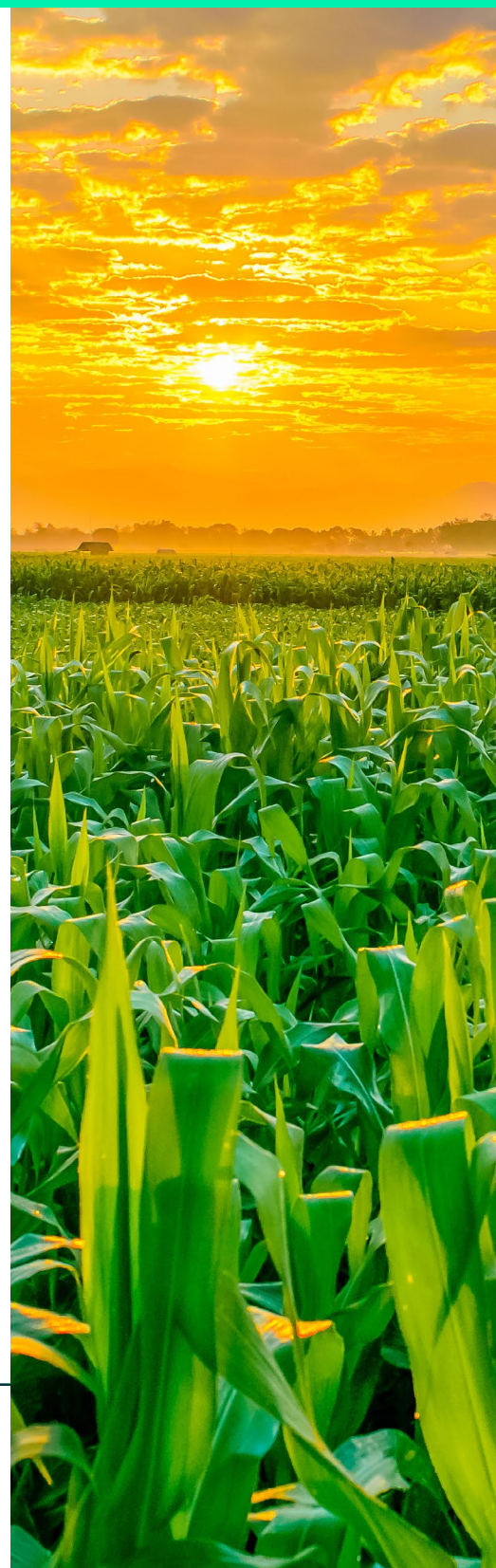
### Get in touch

To learn more, please reach out  
at [policy@cascaDECLIMATE.org](mailto:policy@cascaDECLIMATE.org).

<sup>1</sup> One gigaton is equivalent to one billion metric tons. References to “tons” in this report refer to metric tons. A metric ton or “tonne” is equivalent to 1,000 kilograms, or approximately 2,204 pounds.

<sup>2</sup> 20,000 hectares (50,000 acres) is an estimate based on a survey conducted with 16 project developers and analysis of publicly announced deployments.

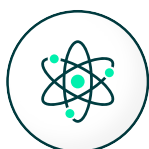
<sup>3</sup> The €450,000 approximation includes the [OASIS](#) and the [CORES](#) projects.





## Recommendations

Although there has been early momentum in ERW across the public and private sectors, the current market and policy environment is insufficient to responsibly scale ERW in the time needed to meet global climate targets. To unlock ERW's full climate and agronomic potential, governments should:



### **1. Invest in dedicated ERW research and development on carbon quantification, agronomic impacts, and environmental risks and co-benefits.**

Publicly-funded R&D should target remaining uncertainties for ERW that the private sector is not well-positioned to address. In particular, long-term field trials and associated data collection and management will be critical to understand ERW's carbon, agronomic, and environmental impact across a range of soil types, operational systems, and regional climates.



### **2. Provide financial assistance to address barriers to scale and support farmer adoption.**

Government financial assistance is needed to overcome barriers to scaling ERW—such as high measurement, reporting, and verification (MRV) costs—while supporting farmer adoption through new business models. This can take the form of funding for pilot projects, procurement policies, and direct compensation to farmers for ERW adoption.



### **3. Increase confidence of prospective carbon removal buyers and investors to enter the market through high-rigor standards and clear regulatory frameworks.**

Uncertainty around the durability and credibility of carbon removal credits, a lack of regulatory clarity, and overall market immaturity have kept prospective CDR buyers and investors from entering the market. Governments can address these challenges through non-financial levers, including the development of high-rigor MRV standards, regulations with transparent timelines, and clear carbon accounting frameworks.

**The purpose of this report is to introduce policy stakeholders to ERW and highlight opportunities to further support this promising carbon removal and land management practice through both new and existing policy levers.**