

Can we profitably invest in natural hydrology?



A focus on cutting emissions misses the point when it comes to understanding what a regenerated biosphere could do to sequester carbon, says Walter Jehne, co-founder of NGO Regenerate Earth.

A reframing of the carbon reduction debate could pay dividends in the fight against climate change. That was the message of a briefing to investors by Walter Jehne, co-founder of NGO Regenerate Earth, as part of a discussion around the opportunity in biodiversity and ecological regeneration.

Jehne, a soil microbiologist who works with graziers, farmers, scientists, businesses and local, state and federal governments to find innovative ways of restoring biosystems, highlighted how the debate on climate had missed a wider point.

“For decades, we’ve fixated on reducing fossil fuel usage,” he said. “And rightly so. But by doing that we’ve only really looked at the human side of the equation. The opportunity – and it’s a tremendous one – is to consider what nature can do with our help to sequester more carbon.”

The soil carbon sponge

To understand what this might mean in practice, Jehne took a long-term planetary historic perspective, where he outlined the concept of the soil carbon sponge. This is the mixture of mineral and organic detritus that covers the earth and which, over hundreds of millions of years, has evolved in tandem with the planet’s microbial and plant life. In doing so, it developed the ability to sequester vast amounts of carbon dioxide from the atmosphere and, crucially, to act as a buffer against extreme weather events.

Biosphere fast facts

- There are more CO₂ emissions from forest fires each year than from fossil fuels.
- More than 75% of the earth’s land area is already degraded, according to the European Commission’s World Atlas of Desertification, and more than 90% could become degraded by 2050.
- Deforestation and forest fires mean the Amazon Basin is now a net emitter of CO₂.
- Forecasts are for nine billion people on the planet by 2030, meaning a concomitant increase in pressure on existing biosystems.

Today, said Jehne, the current biodiversity crisis is being acted out in the context of human interaction with this soil carbon sponge. “Through our activities, largely in just the past 70-100 years or so, we’ve wreaked havoc on this living element through fire, extractive agriculture, fertilisers, biocides, irrigation and bare-soil fallowing,” he said.

For many parts of the world, the damage is now so extensive that the soil is no longer effective in sequestering carbon dioxide or mitigating against hydrological extremes.

“Over half of the world’s rainfall and cloud is driven by precipitation nuclei produced by vegetation. When we reduce vegetation we break that cycle, creating dry, degraded soils less able to sequester carbon and more likely to drive extreme weather events,” said Jehne. “The critical thing is not how much rain we get but what happens with that rain. Does it infiltrate into our soils so it becomes part of an in-soil reservoir, available for plant growth and biodiversity? Or do we create an environment where the rain runs off, evaporates or runs into the sea and effectively becomes lost?”

Given the human impact on the soil carbon sponge in the past hundred years, the result and reality for humans in the coming decades is water insecurities, intensification of wildfires and diseases, further degradation of soils and social and strategic instability, said Jehne.

As examples of this, he highlighted drought in Syria, wildfires in Australia and Canada and extreme or unseasonal temperature rises in India. Together, they serve as climate-change tipping-points that serve as a warning of things to come.





Practical solutions

For investors faced with these tipping points, the question is what can be done. Here, Jehne pointed to practical examples around the world where NGOs such as Regenerate Earth and other advocates have worked with governments, farmers, city planners, companies and landowners to find ways of regenerating soils.

This could be as simple as finding the appropriate mix of crop seeds for farmers to sow in pre-monsoon dry spells – or planting trees and vegetation in urban areas to lower the ambient temperature. In each case, said Jehne, the solutions can create their own positive feedback loops – both in terms of regulating hydrology, combatting rising temperatures and sequestering carbon. This, in turn, means they can also serve the longer terms profit motives of investors.

“We’ve got levers all along the train,” he said. “There are practical steps we can take and we’re responsible for taking them. Whether that’s regenerating grasslands, revegetating urban areas or simply planting the right kinds of trees in the right areas, there are actions we can take beyond just reducing emissions to address that ten-billion-tonne global carbon deficit we all face.”

In each case, said Jehne, the solutions can create their own positive feedback loops – both in terms of regulating hydrology, combatting rising temperatures and sequestering carbon.

To conclude, Jehne highlighted how, to quote author Jared Diamond, archaeology is littered with the ruins of failed civilizations that collapsed as they degraded their soils, and with them the water, food and bio-systems those civilisations relied on for their survival.

“In the words of President Franklin D. Roosevelt: ‘The nation that destroys its soil destroys itself,’” said Jehne. “Only by reversing the degradation of soils can we head off climate catastrophe. Just as nature created this biosystem so we can regenerate it.”

“In the words of President Franklin D. Roosevelt: ‘The nation that destroys its soil destroys itself,’” said Jehne.

For more information on how Federated Hermes is engaging with the biodiversity challenge [read about the launch of our Biodiversity Equity Fund.](#)

Federated Hermes Limited

Federated Hermes is a global leader in active, responsible investing.

Guided by our conviction that responsible investing is the best way to create long-term wealth, we provide specialised capabilities across equity, fixed income and private markets, multi-asset and liquidity management strategies, and world-leading stewardship

Our goals are to help people invest and retire better, to help clients achieve better risk-adjusted returns, and to contribute to positive outcomes that benefit the wider world.

All activities previously carried out by Hermes Investment Management are now undertaken by Federated Hermes Limited (or one of its subsidiaries). We still offer the same distinct investment propositions and pioneering responsible investment and stewardship services for which we are renowned – in addition to important strategies from the entire group.

Our investment and stewardship capabilities:

- **Active equities:** global and regional
- **Fixed income:** across regions, sectors and the yield curve
- **Liquidity:** solutions driven by four decades of experience
- **Private markets:** real estate, infrastructure, private equity and debt
- **Stewardship:** corporate engagement, proxy voting, policy advocacy

Why EOS at Federated Hermes?

EOS at Federated Hermes enables institutional shareholders around the world to meet their fiduciary responsibilities and become active owners of public companies. EOS at Federated Hermes is based on the premise that companies with informed and involved shareholders are more likely to achieve superior long-term performance than those without.

For more information, visit www.hermes-investment.com or connect with us on social media:



The value of investments and income from them may go down as well as up, and you may not get back the original amount invested. Past performance is not a reliable indicator of future results.

For professional investors only. This is a marketing communication. The views and opinions contained herein are those of Walter Jehne, co-founder, Regenerate Earth, and may not necessarily represent views expressed or reflected in other communications, strategies or products. The information herein is believed to be reliable, but Federated Hermes does not warrant its completeness or accuracy. No responsibility can be accepted for errors of fact or opinion. This material is not intended to provide and should not be relied on for accounting, legal or tax advice, or investment recommendations. This document has no regard to the specific investment objectives, financial situation or particular needs of any specific recipient. This document is published solely for informational purposes and is not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments. Figures, unless otherwise indicated, are sourced from Federated Hermes. This document is not investment research and is available to any investment firm wishing to receive it. The distribution of the information contained in this document in certain jurisdictions may be restricted and, accordingly, persons into whose possession this document comes are required to make themselves aware of and to observe such restrictions.

Issued and approved by Hermes Investment Management Limited ("HIML") which is authorised and regulated by the Financial Conduct Authority. Registered address: Sixth Floor, 150 Cheapside, London EC2V 6ET. HIML is a registered investment adviser with the United States Securities and Exchange Commission ("SEC"). Distributed in the EU by Hermes Fund Managers Ireland Limited which is authorised and regulated by the Central Bank of Ireland. Registered address: 7/8 Upper Mount Street, Dublin 2, Ireland, D02 FT59.

BD009901 0013023 05/22