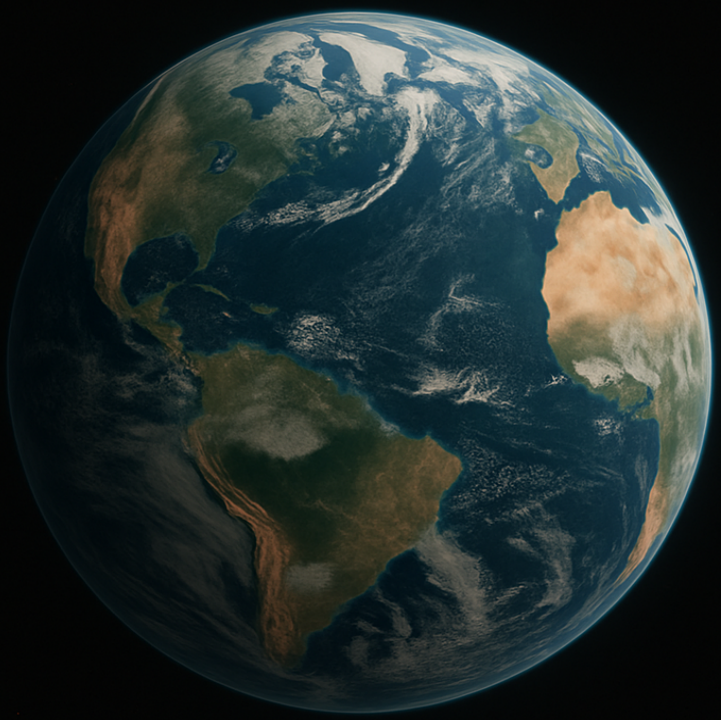
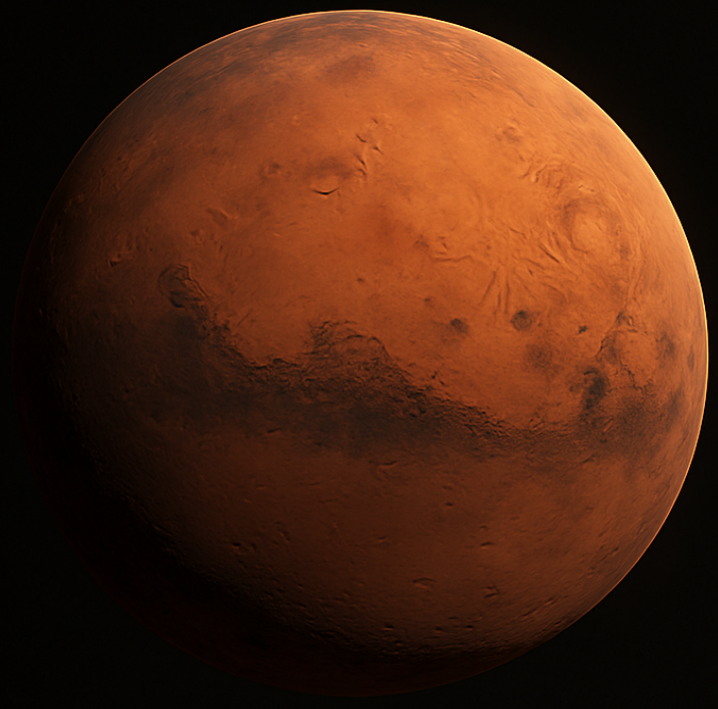
Introducing the Barrenline

Baselining is counter-productive for nature-based solutions and climate finance in general.

An attempt at valuing resilience.

By Kjell Clarysse





Environmental finance is built on baselines[1]. We measure forest loss from a point in time, benchmark soil health against regional averages, and model climate resilience by referencing what came before. But the baseline is deceptive. Like measuring altitude from a mountaintop, it hides how far we can fall. If we want to understand nature's real economic value, we must start lower. We must imagine the deadscape.

For decades, environmental assessments have used the baseline, a reference point drawn from current or past states of nature. But here is the problem. If your baseline is already degraded, for instance a half-dry wetland or a fragmented forest, you are anchoring your value system to damage. Even worse, if you are starting from something still intact, you risk treating it as "free," simply because it has always been there. You are measuring from a state of abundance and fail to measure from a state of scarcity, although the latter one is much more accurate today.

It also goes against all financial incentive mechanisms to repair something, because reaching an intact status again, reaches a value of zero. This is the equivalent of inheriting a billion dollars and only measuring what you earn on top of it.

From Baseline to Barrenline

What we need is not another incremental or dynamic baseline. We need a barren line. A new reference point that starts from the total absence of nature. Picture it: no trees, no water cycles, no carbon sinks. Just dust and rock. In other words, Mars.

Mars is a brutally honest comparator. It is a red, sunlit graveyard, full of potential, devoid of life. Everything Earth has that Mars does not: clouds, soil, frogs, humidity, shade, mushrooms, rain, is what makes our economy and our species possible. Yet we treat these features as background conditions instead of foreground assets.

[1] Dasgupta, P. (2021). *The Economics of Biodiversity: The Dasgupta Review*. HM Treasury.
This review emphasizes the foundational role of natural capital in supporting economic activities, health, and agriculture. p.5.

Unlike the baseline, which compares today to yesterday, the zero line compares today to our best alternative if we mess up the entire landscape. It is a radical re-centering of value around absence. Not because we are nihilists, but because we are economists. This zero line makes visible the colossal difference between a functioning planet and a non-functioning one. It forces us to acknowledge that everything from GDP to health to agricultural yield rests on a pre-installed natural infrastructure we did not build and barely maintain[2].

Rethinking Value

Think of a coastline not as scenery, but as flood insurance. Think of a rainforest not as a menagerie of rare species, but as atmospheric regulation hardware. Think of soil not as dirt, but as a multi-functional platform providing nutrient delivery, water buffering, and carbon storage, twenty-four hours a day, with no subscription fee. All of this value becomes obvious if we start from zero[3].

To be clear, this is not just an academic provocation. It has real implications for how we model risk, design insurance, value land, and structure sovereign debt. Countries rich in ecosystems are, in effect, sitting on vast unpriced infrastructure[4]. Yet in financial terms, this infrastructure is often invisible because our reference systems are built on local history, not planetary scarcity.

That is the philosophical trap of the baseline. It hides the financial value in plain sight.

Instead of asking how much better this forest is than a degraded one, we should ask how much more valuable it is than a barren wasteland, which it can become in just one generation. It is a blunt question, but a clarifying one. Once we accept that the natural world is not the default setting, but the exception, that life is not cheap, but rare, we start seeing value everywhere. Not just as carbon credits. Not just as water quality. But as the fundamental precondition for markets, profit, and human comfort[5].

Deadscapes as a baseline

The deadscape is what comes after full ecological degradation. Not a desert, which has its own logic and balance. A desert can thrive in its stillness. A deadscape cannot. It is the aftermath of

[2] Idem
[3] Barbier, E. B. (2007). "Valuing Ecosystem Services as Productive Inputs." *Economic Policy*, 22(49), 177–229.
[4] World Bank. 2018. *The Changing Wealth of Nations 2018: Building a Sustainable Future*. Washington, DC: World Bank, p. xvii. (https://documents1.worldbank.org/curated/en/727941517825869310/pdf/123137-Replacement-PUBLIC.pdf)
[5] Rockström, J. et al. (2009). "A safe operating space for humanity." *Nature*, 461(7263), 472–475.
This paper introduces the concept of planetary boundaries, emphasizing the finite nature of Earth's systems and their role in sustaining human societies. p.472.

extractive use, unchecked erosion, and systemic neglect. It may appear calm, but it has no pulse. No water cycles. No carbon absorption. No functional root systems to hold soil.

But not all deadscapes are equal. Some are silent. Others are unstable. A key distinction is emerging for those who think in infrastructure, insurance, and sovereign risk: the stable deadscape versus the liability deadscape.

The stable deadscape is like an abandoned industrial floor. It does nothing, but it no longer threatens anything. It is barren land with no runoff, no structural tension, and no surprise. It does not contribute to the global cycles of water, phosphor, carbon, etc., which is usually problematic enough because it stands in the way of natural cycles. From a financial perspective, it is a zero. A sunk cost with no active liability, no urgent premium. But no value either.

The liability deadscape is different. This is the slope that was once forested, now stripped bare, waiting for the rain to turn it into a mudslide, destroying downstream property and clogging up dams. It is the drained wetland that no longer filters water and now floods nearby fields. These are not merely lost opportunities. They are active threats. They carry forward motion. Kinetic debt. These landscapes may not appear on balance sheets, but they have to[6]. Their future costs are almost always paid by the public[7].

In finance, we are used to discounting future value. But we rarely account for future volatility built into the land itself. This is a blind spot. When nature degrades but retains energy, it behaves like faulty infrastructure[8]. From a valuation standpoint, these are negative assets. And because our models begin at the baseline and not the barren line, we rarely assign them the cost they deserve.

From Deception to Definition

Under today's rules, intact ecosystems are treated as a financial non-event. Damaged ecosystems qualify for revenue through "restoration" credits. Finance can book negative assets and liabilities. The problem is misclassification. Living systems with endogenous repair are treated as static liabilities. Shadow prices and hypothetical counterfactuals put numbers on services, but they rarely migrate into balance sheets, sovereign terms, or premiums. They are informative yet impotent. The missing line item is Self-Restoration Value (SRV): the present value of a system's recovery potential if left alone.

[6] Swiss Re Institute (2021). *Biodiversity and Ecosystem Services: A Business Case for Reinsurance*. Zurich: Swiss Re.
[7] Idem.
This publication discusses the economic risks associated with biodiversity loss and the implications for public and private sectors. p.8.
[8] IPCC (2021). *Climate Change 2021: The Physical Science Basis*. Cambridge University Press.

From Metaphor to Method

Deadscapes are observable: the Aral Sea's saline dustbed, acid tailings ponds from mining activities, bare hillsides ready to generate a mudslide are as bad as Mars because they harm life. They carry kinetic risk (erosion, flood surge, contamination): a liability landscape with kinetic debt. The barrenline sets these as ≤0, degraded ecosystems with human-assisted repair capacity sit >0, degraded ecosystems with self-repair capacity sit even higher and intact ecosystems are 1 (fully functioning infrastructure with regional and/or global benefits). This removes the preservation blind spot and sets the decision rule: protect intact, buffer and nurse degraded, remediate or quarantine deadscapes, a priority ladder.

Use dynamic baselines to police credit issuance (anti-gaming), but anchor value with the barrenline to make preservation financeable and visible. Counterfactual baselines invite threat inflation. The barrenline anchors value in observable absence.

Operational Pathways

1. Sovereign debt:

Countries could place their Natural Infrastructure Assets (forests, wetlands, soils) on the balance sheet alongside roads and bridges. This strengthens the equity base of the state. And there is a good reason for doing that. Countries with stronger net asset positions pay lower borrowing costs, even with modest GDP growth. For low-income nations, natural capital makes up almost half of national wealth. Recognizing it formally would make ecosystems a shield in debt negotiations and a bargaining chip for better credit terms.

2. Insurance:

Insurers could treat degraded landscapes like unstable buildings, charging higher premiums because of the risk they create. For example, a bare hillside that might trigger mudslides should raise local property insurance costs until it is re-vegetated. Conversely, functioning wetlands and mangroves could earn parametric discounts, lowering premiums when they are proven to reduce flood damage. In this way, ecosystems are priced directly as protection infrastructure.

3. Risk models:

Investors and banks already map risks in portfolios (currency, inflation, disasters). Ecosystems can be treated the same way. A forest in decline is flagged as a higher-risk asset, of which risk-reduction efforts can be measured over time (intervention and/or self-repair capacity). An intact watershed lowers risk ratings because it stabilizes water supply and reduces flood exposure. The barrenline gives finance a simple rule: intact nature reduces volatility, degraded nature is fragile but improvable, and deadscapes are liabilities that must be provisioned against. This also makes for logical priority setting of efforts. First protect what we still have. This is the least expensive, so maximum effect if available global resources are limited, which they are. And the success

with which we can do this, will influence positively the cost and efficacy with which the rest can be repaired.

4. Stable and secure food supply chains:
Agriculture and food companies depend on predictable rainfall, healthy soils, and stable microclimates. Degraded landscapes increase volatility (crop failures, water shortages, and supply chain disruptions). By contrast, intact ecosystems act like risk buffers, keeping yields more stable and reducing costs linked to shocks. Recognizing ecosystems as supply chain infrastructure means financing their protection can be justified not only as conservation, but as a direct investment in food security and lower business risk.

Begin at the real Zero

The real risk is not that we will overvalue nature. It is that we will continue to misvalue it. That we will keep rewarding noise and overlooking silence.

In the end, we must stop asking what nature is worth compared to yesterday. We must ask what it is worth compared to nothing[9]. Not as metaphor. As method to deal with the real resilience threat that we are facing. After all, without the once abundant natural infrastructure, we would have never built a modern civilisation and economy.

About the Author:
Kjell is a Historian and Economist with first-hand entrepreneurial experience in Nature as an Asset Class, specializing in designing innovative legal-financial structures that bridge nature and markets.

[9] Rockström, J. et al. (2009). "A safe operating space for humanity." *Nature*, 461, 472-475.