Gresham House
Specialist investment

Natural Capital

A distinct asset class and source of portfolio diversification

A positioning paper for institutional allocators

September 2026

Executive summary

Institutional portfolios are far more diversified by label than they were three decades ago, incorporating alternatives and private assets for up to 50% in allocations, significantly including a variety of private asset exposures, such as private equity, core-to-value-add infrastructure and real estate.

However, portfolios typically remain exposed to the same underlying return drivers that affect equities and bonds, interest rates, liquidity and short-term market sentiment. In 2022 this became clear when rising rates pushed equities and bonds lower together and a traditional 60/40 portfolio fell by 16–17%.

For long-term investors, natural capital speaks directly to this concentration. Its returns are driven by biological growth, land productivity and environmental markets rather than by interest rates or market sentiment, so it has a genuinely low correlation with a conventional portfolio and even a modest allocation can improve the portfolio's risk-adjusted return.

Natural capital offers a genuinely different source of financial return. Its value is anchored in biological growth, land and the growing monetisation of ecosystem services, alongside structural tailwinds from global economic and population growth drivers rooted in the physical economy rather than the financial cycle. This paper sets out, for allocators and investors, evaluating an initial allocation to this asset class, five practical questions: (1) which asset allocation sector natural capital sits within; (2) a definition of what it is; (3) why investor portfolios will benefit; (4) what an appropriate allocation could be; and (5) the risks to manage.

In brief

1. **Where to allocate:** Primarily Real Assets, sitting alongside real estate and infrastructure; increasingly, allocations are held in a dedicated natural capital or "natural resources" allocation.
2. **How we define natural capital:** Three land-based sub-strategies, sustainable forestry (timber), agriculture, and nature markets (carbon and biodiversity credits, including Biodiversity Net Gain).
3. **Why investor portfolios can benefit:** Differentiated return drivers and low-to-negative correlation to a diversified portfolio mean even a 10% allocation improves risk-adjusted return (Sharpe +7.4%, Sortino +32.5%), lifts the diversification ratio (+7.2%) and reduces equity beta by 13%.
4. **What is an appropriate allocation:** The portfolio benefit is front-loaded, a 10% allocation captures 64% of the average maximum improvement (86% by 15%, 97% by 20%), making ~10% a pragmatic entry point. Within that we focus around an allocation base case of 65% forestry / 25% agriculture / 10% nature markets.
5. **The risks to manage:** Natural capital carries physical, market, regulatory, operational and currency risks. These differ from mainstream financial-market risks and are manageable through diversification across geography, species and crop type, conservative underwriting, active on-the-ground management, and appropriate insurance and governance.

1. Which asset class does natural capital fall into?

Natural capital sits, first and foremost, within real assets.

It is the third major asset class within real assets, alongside real estate and infrastructure, and shares the defining characteristics allocators look for in the category: tangible, physical assets with intrinsic value; returns linked to the real economy rather than only to nominal financial markets; long duration that matches long-dated liabilities; and a blend of income and capital appreciation.

Why it belongs in real assets

Tangible and intrinsic: The value rests in land plus the biological asset it carries, meeting the definitional test for a real asset.

Real-return and inflation-linked: Returns are driven by real inputs (timber and crop prices, land values), providing protection that nominal bonds cannot.

Low correlation to public equity and fixed income: The diversification case; timber in particular compounds through biological growth largely independent of the market cycle.

Long-duration and illiquid: A natural match for the liabilities of pensions, insurers and endowments.

How it is classified in practice

Classification is not fully standardised, so where natural capital sits will depend on your own framework. In practice it finds a consistent home within real assets across the major institutional markets, with one meaningful variation: Canadian institutions tend to hold it in a dedicated natural-resources allocation rather than within real estate

The summary below sets out current market practice as a reference point.

UK	US	Canada	Australia
Real assets	**Real assets**	**Natural resources**	**Real assets**
Timerland & Farmland sub-asset class	NCREIF-benchmarked; real-estate-adjacent	A distinct allocation, separate from real estate	Agriculture-weighted; small but growing
Real-return / inflation hedge	*Real-return real asset*	*Commodity-linked / climate solutions*	*Real assets, agri-led*

Three of the four major markets classify natural capital within real assets; Canada uses a distinct natural-resources allocation.

This points to two natural homes. Where real assets is your entry point - as is typical in the UK, US and Australia - the timber economics and inflation-linkage are the most direct fit. Where you run a dedicated natural-resources or natural-climate-solutions allocation - as is common in Canada - the carbon and biodiversity layers may sit more naturally there, often within a larger allocation.

2. What natural capital actually is, a land-based focus

Natural capital is the world's stock of natural assets - forests, soils and land, freshwater and air - that generate flows of economic and ecological value over time through ecosystem services. For an institutional investor it resolves into three complementary, land-based sub-strategies. What ties them together is simple: each derives value from the productive capacity of land and biological systems, giving exposure to return drivers that are fundamentally different from those underpinning most financial assets.

Sub-strategy	What it is	How value is generated	Target net IRR	Target net yield
1. Timber (Sustainable Forestry)	Acquisition and active management of commercial timber estates.	Biological growth, timber sales, land appreciation, plus nature-market revenues (carbon, biodiversity).	8–12%	~2%
2. Agriculture	Acquisition and management of productive farmland and associated operations.	Crop income or lease income, alongside long-term land appreciation.	8–12%	4–10%
3. Nature markets	Creation and sale of environmental credits from carbon, biodiversity (including Biodiversity Net Gain) and other ecosystem services.	Monetisation of environmental outcomes through statutory markets (e.g. Biodiversity Net Gain), long-term contracts, or voluntary credit markets.	10–12%	4–10%

Projections and IRRs outlined are targets only and are not a reliable indicator of future performance. Capital at risk.

The land-based thread

The unifying discipline across all three sub-strategies is land control, active management and long-term stewardship.

A single estate can carry more than one revenue layer at once - a commercial forest producing timber can also generate carbon credits and host biodiversity units - which is the source of natural capital's layered, additive return profile and the reason it is best understood as a land-based asset class rather than a set of unrelated strategies.

A closer look at carbon credits

Carbon is the most developed of the nature-market revenues and the one most likely to feature in a forestry allocation. It is an additive income line generated from the same land as timber: a managed forest sequesters carbon as it grows, and that sequestration can be verified and sold as credits without displacing the eventual timber harvest. Two kinds of market exist. Compliance (regulated) markets - such as the New Zealand ETS, California's Cap-and-Trade programme, Australia's ACCU scheme and the UK Woodland Carbon Code - are backed by legislation and tend to be deeper and more durable. Voluntary markets, where corporates buy credits against net-zero commitments, are larger in aspiration but less mature.

For an allocator, three points matter more than any single price. Integrity is increasingly rewarded, so verification and permanence - not headline volume - drive realisable value. Carbon revenue carries scheme-specific policy risk, making diversification across regimes a genuine risk control.

And carbon complements timber rather than replacing it, best treated as upside on a portfolio that already stands on its timber economics.

3. Why investors should allocate to natural capital and the evidence

Natural capital's appeal rests on two mutually reinforcing foundations: a set of structural drivers rooted in the physical economy, and the historical data that bears them out.

The investable universe is large and under-institutionalised. The global forestry market is estimated at around €370bn, of which only about €108bn - under a third - is under institutional ownership, leaving material room for allocation growth. The opportunity spans temperate OECD markets: Europe (c.160m ha of productive forest and a major export market), North America (c.210m ha of commercial timberland - the largest and most liquid institutional timber market, with housing-led structural demand), and Australasia (a smaller but fast-growing softwood plantation base and a gateway to Asian demand).

The other two verticals sit either side of forestry in size, and both are earlier in their institutional development.

Agriculture is by far the largest physical market - global farmland is measured in the trillions of dollars - yet only a small fraction is under professional management, so the investable opportunity is still at an early stage. Nature markets are the newest and smallest but the fastest-growing: the voluntary carbon market, worth a few billion dollars today, is projected to reach tens of billions by 2030, with biodiversity markets - including the UK's statutory Biodiversity Net Gain - emerging from a low base.

The structural case

Four structural trends explain why natural capital behaves differently from other financial assets, and why the diversification and resilience shown in the data are likely to persist.

- **Demographic and economic growth:** Population growth, urbanisation and rising consumption are increasing demand for food, timber and other renewable materials. Natural capital assets meet this demand through biological production, with the growth of trees and crops increasing physical output and supporting returns over time.
- **Resource security and shorter supply chains:** Geopolitical fragmentation and supply-chain disruption are increasing the strategic importance of secure and resilient sources of essential commodities.
- **Climate change and constrained supply:** Water scarcity, land degradation and more frequent extreme weather are placing growing pressure on the finite supply of productive land and healthy ecosystems.
- **Environmental policy and market development:** Net-zero commitments, biodiversity regulation and growing recognition of nature's economic value are creating demand for carbon sequestration, ecosystem restoration and other measurable outcomes.

The financial case

- **Differentiated, competitive returns:** Forestry and agriculture have delivered historical returns of 7.7% and 12.0%, respectively, driven by factors that differ from those affecting listed markets. This can enhance returns without adding equivalent exposure to correlated market risk.
- **Downside mitigation:** Biological growth and land value compound through the cycle, and standing timber can be left to grow when prices are weak, so the assets tend to hold value when listed markets fall.
- **Low-to-negative correlation:** As set out below, correlation to a conventional diversified portfolio is low - positive for forestry (+0.24) and agriculture (+0.31) and negative for carbon (−0.42), the last providing support in a downside scenario. This is the engine of the diversification benefit.
- **Inflation resilience:** Revenues linked to physical output and policy pricing carry more inflation pass-through than nominal claims, giving a long-term hedge that conventional bonds lack.

Historical risk and return (GBP, 2000–2025)

Vertical	Year	Mean return		Volatility		Correlation to portfolio	
		Source	Processed	Source	Processed	Source	Processed
Forestry	2000– 2025	7.72%	6.35%	6.11%	13.75%	−0.03	+0.24
Agriculture	2000– 2025	12.01%	7.42%	7.87%	15.97%	+0.03	+0.31
Nature markets (carbon)	2016– 2025	5.11%	5.81%	15.16%	18.27%	−0.53	−0.42
Illustrative diversified UK portfolio	2000– 2025	5.84%	5.84%	7.40%	7.43%	–	–

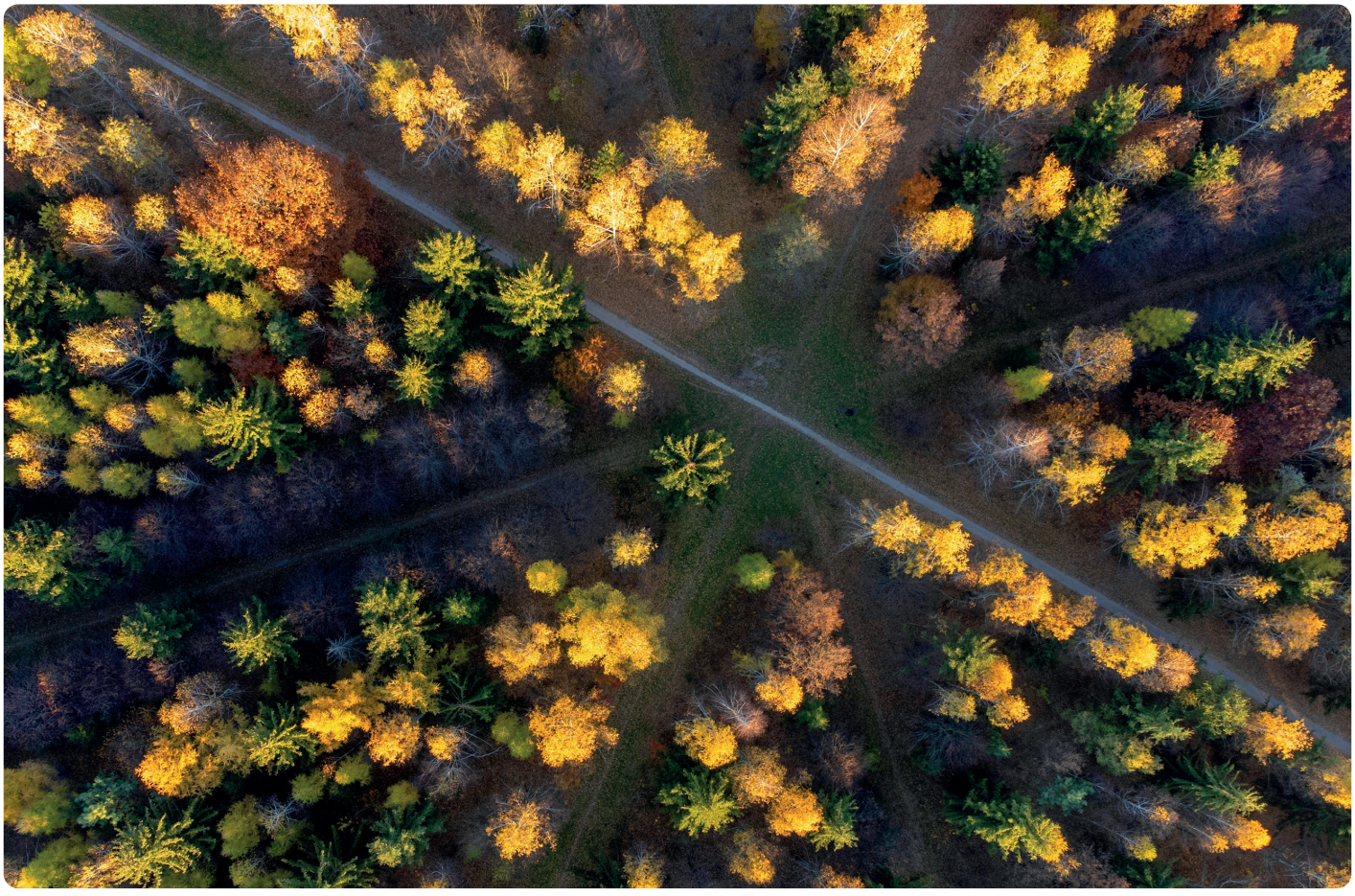
Source = reported index; Processed = desmoothed, converted to sterling and statistically shrunk. Forestry and agriculture's low positive correlation, and carbon's negative correlation, support their diversifying role and provide support in a downside scenario.
Past performance is not necessarily a guide to future performance.

A note on measured volatility

Reported volatilities for privately held assets need care before comparison with listed markets.

Unhedged conversion into sterling more than doubles measured volatility - timberland rises from 6.1% to 13.8%, farmland from 7.9% to 16.0% - so a hedged allocation would carry materially less. Most of what appears to be asset risk here is in fact currency risk.

Together these are exactly the four properties allocators say they want from the asset class: attractive risk-adjusted return, downside mitigation, genuine diversification and inflation resilience.



4. Allocating across natural capital - what an optimal portfolio allocation could look like

The practical question is not whether natural capital has attractive standalone properties, but what role it plays inside a diversified portfolio.

We assess this using a hypothetical UK pension fund with sterling liabilities as the benchmark - 35% global equities, 30% UK gilts, 10% UK equities, 10% US aggregate bonds, and 5% each in global infrastructure, UK REITs and US TIPS, and introduce a natural-capital allocation at progressively higher levels, funded proportionately across the benchmark so the effect of adding natural capital is isolated.

Sizing the allocation

The portfolio benefit is front-loaded. Measured across four objectives - Sharpe ratio, diversification ratio, equal-risk-contribution and portfolio variance - the optimal allocation spans roughly 19.0–24.5%, but most of the benefit arrives early: a 10% allocation captures 64% of the average maximum improvement, rising to 86% at 15% and 97% at 20%.

Given deployment, liquidity and concentration constraints, a ~10% allocation is a pragmatic balance between capturing the benefit and maintaining flexibility, so natural capital behaves as a structural allocation, not a thematic tilt.

A model natural capital allocation

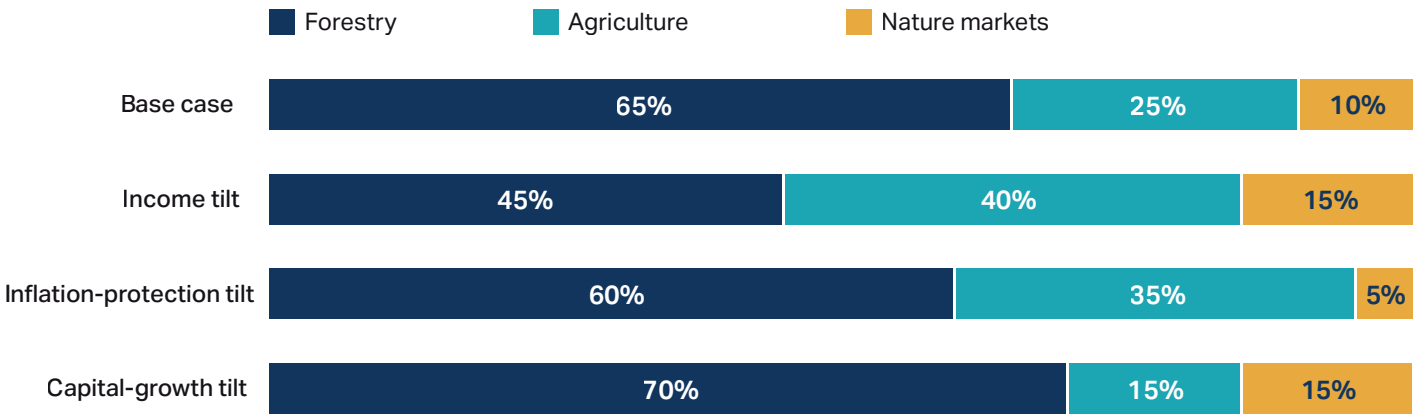
Within that allocation, the split is a governance judgement rather than an optimiser output - an unconstrained optimiser would simply concentrate in whichever leg had the best in-sample history. Informed by the data, market maturity and where value is most reliably created, the base case is:

Sub-strategy	Weight	Role in the allocation
Timber (Sustainable Forestry)	~65%	Largest share, reflecting the depth of institutional track record and the capability to deploy into it; the core land engine on which nature-market revenues are also generated.
Agriculture	~25%	Retained for the downside mitigation farmland has historically provided, and for a differentiated land return.
Nature markets (carbon & biodiversity)	~10%	Smallest weight given a shorter history, higher volatility and greater policy dependence; sized as a deliberate minority position that keeps that dependence proportionate to the evidence.

Tilting the mix by investment objective

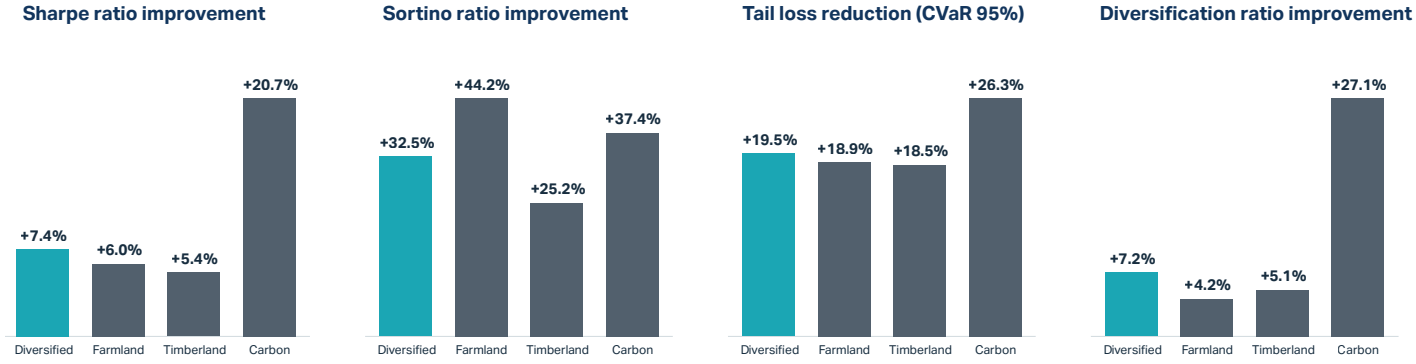
The base case is a starting point, not a prescription: the mix can be tilted to the outcome an investor prioritises. An income focus leans toward agriculture and nature markets, which carry the higher running yields; an inflation-protection focus leans toward forestry and agriculture, with their biological growth, land value and commodity pass-through; and a capital-growth focus concentrates further in forestry.

The chart below shows illustrative tilts around the 65/25/10 base.



Every allocation improves portfolio outcomes

The result holds however the allocation is built. Measured against the core-only portfolio, a blended natural-capital allocation improves every metric - and each vertical contributes something different: farmland does most of the downside work, carbon most of the diversification work, and timberland combines established land-asset benefits with emerging carbon potential.



Why a blended allocation

- **Complementary strengths**: Farmland provides downside mitigation, carbon enhances risk-adjusted returns, and timberland combines established land-asset benefits with emerging carbon potential.
- **Broader evidence base:** Timberland and farmland have 26 years of history, against 10 years for carbon.
- **Lower concentration risk:** Blending reduces dependence on any single asset, revenue stream or short dataset.

Why manager selection matters more here

Natural capital value is created through the acquisition, management and continual improvement of physical assets over long horizons, soil, water, species, climate and local regulation all affect returns. Manager skill therefore influences outcomes more than in most asset classes, and selection should extend well beyond track record to origination, underwriting, active management, governance and reporting.

5. Managing the risks

A credible allocation case must address risk as clearly as opportunity. Natural capital's risks are real but differ from mainstream financial-market risks, and are manageable through active, disciplined management.

The table below sets out each principal risk, how it is managed, and an overall assessment.

Risk	Potential impact	How it is managed	Overall risk
Climate, weather & physical	Fire, storms, drought, pests, flooding and disease; frequency may rise with climate change.	Diversify by geography, species and crop; active management, conservative underwriting, insurance; replanting and salvage.	High
Commodity & market price	Cyclical timber and crop prices affect income and valuations.	Defer harvest in weak markets; leases and geographic / crop diversification.	Medium
Regulatory & policy	Dependence on frameworks (BNG, ACCU, NZ ETS, EU agri-environment); design changes affect economics.	Focus on enacted, durable policy; conservative underwriting; active engagement.	Medium
Nature-market development	Varying market maturity; liquidity, pricing and methodology can shift, especially in voluntary markets.	Underwrite to market maturity; favour statutory markets; diversify.	Medium
Illiquidity & exit	Long holding periods (forestry 10–15 years; agriculture 7–10).	Match horizons to objectives; harvest timing, contractual cash flows, developing secondary market.	Low
Operational & manager	Returns depend heavily on manager skill and execution.	Select specialist managers with proven expertise, strong governance and independent valuation.	Low
Currency	Cross-border FX exposure affects reported returns and volatility.	Assess non-domestic assets on a hedged basis; manage within currency policy.	Medium

Five cross-cutting levers do most of the work: diversification; conservative underwriting; active, on-the-ground management; insurance, valuation and governance; and market and currency discipline - turning a risk register into managed exposure, and the point at which an active, specialist manager earns its place.

Conclusion

Natural capital gives institutional investors access to return drivers that differ fundamentally from those underpinning most financial assets. The historical evidence shows forestry and agriculture delivering competitive returns, low-to-negative correlation and useful inflation resilience, the profile of a structural portfolio allocation rather than a thematic bet, while nature markets extend the opportunity set through investable, policy-backed revenues.

For allocators, the implication is clear: natural capital should be treated not simply as another real asset, but as a distinct source of diversification with the potential to improve resilience and broaden exposure to the physical economy.

Realising that potential depends on disciplined underwriting, active management and the selection of a specialist manager with the operational capabilities to create and protect value throughout the investment lifecycle.

Sources and basis of preparation:

Executive summary: The alternatives allocation (up to ~50% for the largest allocators) is supported by the CFA Institute (which notes the Yale Endowment and CPP Investments hold close to 50% in alternatives, as outliers) and industry reporting that many large pension systems allocate 30-50%. The 2022 60/40 drawdown is public market data; the correlation and portfolio-improvement claims draw on the Gresham House portfolio analysis (Sections 2 and 4, below).

Market classification (Section 1): Pension Protection Fund Statement of Investment Principles; NCREIF; OTPP, PSP and CPP Investments disclosures; IPE Real Assets; Industry Super Australia. Each institution's own current public taxonomy, not a standard.

Structural drivers (Section 3): Gresham House assessment of demographic, resource-security, climate and environmental-policy trends. Qualitative; no specific demand statistics are cited.

Market size (Section 3): Forestry: global market ~€370bn / ~€108bn institutional, plus regional statistics - Gresham House (underlying source to be confirmed). Farmland: a multi-trillion-dollar physical market of which only a small fraction is institutionally managed - Nuveen (which describes farmland as a less developed, illiquid asset class with no global benchmark) and Valoral Advisors (which tracks the institutional farmland-fund universe). Nature markets: the voluntary carbon market is a few billion dollars today, projected to tens of billions by 2030 - MSCI Carbon Markets and Ecosystem Marketplace (State of the Voluntary Carbon Markets); biodiversity markets emerging (incl. UK BNG). Directional market-size figures. Target net IRR / net yield by sub-strategy (Section 2): Gresham House; indicative, not guaranteed.

Portfolio analysis (Sections 3 & 4): Gresham House, "Natural Capital: A portfolio perspective", August 2026. Returns, volatility and correlations are desmoothed (Geltner 1993), converted to GBP and James-Stein-shrunk; forestry and agriculture from the NCREIF Total Timberland and Total Farmland indices, carbon from CA/WCI compliance prices, benchmark data via Bloomberg, cross-checked against Cliffwater's 2026 Asset Allocation Report. Sharpe and diversification ratios are computed from the theoretical mean/covariance; Sortino and tail loss (CVaR, 95%) from each scenario's realised, desmoothed path. Measured against an illustrative 7-asset UK pension benchmark; risk-free rate SONIA (~2.47%); annual, 2000–2025. Carbon rests on 10 years (2016–2025) and does not span a full market cycle, so carbon comparisons are indicative rather than like-for-like. All figures are gross of fees; no transaction costs are modelled. The 65/25/10 split and the objective tilts are Gresham House governance judgements, not optimiser outputs.

Risk assessment (Section 5): Gresham House natural capital research, 2026. The risk ratings are Gresham House's own judgemental assessment.

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Historical analysis is not a forecast; private, appraisal-based assets may show lower measured volatility than listed assets, and unhedged currency exposure raises measured volatility. Market classifications are third-party public disclosures. Issued by Gresham House.

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