

CAPCO

JOURNAL

The Capco Institute Journal of Financial Transformation

Value dynamics

Disruptive forces reshaping
financial services

Secular shifts

Nature as an asset class:
Unlocking financial value
in a changing world

Eoin Murray

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The Capco Institute Journal of Financial Transformation

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2025, Edition 61

JOURNAL

Value dynamics

Welcome to the 61st edition of the Journal of Financial Transformation.

I am delighted to announce our new partnership with King's College London, a world-renowned leader in education and research, marking a new chapter in the Journal's long and distinguished history.

In this edition focusing on Value Dynamics, we explore a critical – and ever more pressing – challenge: how institutions across financial services create, distribute and sustain value.

As Professor Crawford Spence, our editor from King's College highlights in his own introduction, the forces shaping value dynamics across financial services are myriad, encompassing technological transformations, secular shifts, political and social structures.

As a firm that has been at the cutting edge of innovation for over 25 years, these value drivers intersect directly with the work Capco does every day, helping our clients around the globe transform their businesses for sustained growth.

The integration of innovative new technologies including generative and agentic AI models, the digitalization of currencies and payments infrastructures, the reimagining of customer experiences, the relentless evolution of market ecosystems, the vital role of culture as a value driver: these imperatives are where we see – first-hand – clear opportunities for our clients' future growth, competitive differentiation and success.

We are excited to share the perspectives and insights of many distinguished contributors drawn from across academia and the financial services industry, in addition to showcasing the practical experiences from Capco's industry, consulting, and technology SMEs.

It is an immense source of pride that Capco continues to champion a creative and entrepreneurial culture, one that draws on the deep domain and capability expertise of thousands of talented individuals around the world.

We do not take our hard-earned status as a trusted advisor lightly, nor our responsibility to make a genuine difference for our clients and customers every single day – placing excellence and integrity at the forefront of everything we do.

I hope the articles in this edition help guide your own organization's journey as you navigate the many complexities and opportunities ahead.

As ever, my greatest thanks and appreciation to our contributors, readers, clients, and teams.



A handwritten signature in black ink that reads "Annie Rowland". The signature is fluid and cursive, with a long, sweeping underline that extends to the right.

Annie Rowland, Capco CEO

2025, Edition 61

Editor's note



**KING'S
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This 61st edition of the Journal of Financial Transformation is the first with a new editorial team in place, and is the product of a formalized collaboration between Capco and King's College London. This collaboration – a leading financial services consultancy and a prestigious academic institution – embodies the Journal's ethos: a balance between academic rigor and practical accessibility.

Traditional academic journals often deal with more prosaic conceptual matters. Even when they focus on more practical concerns, the timelines and mechanics of double-blind peer review processes can mean that the insights that they offer risk being out of date by the time they are published. Conversely, traditional op-ed articles in the financial press are all too often heavy on opinion and pre-conceived ideas and can lack the heft that comes with thoroughly researched pieces of work.

The Journal we've published strikes a vital balance between these two approaches.

This edition has an overarching focus of Value Dynamics. Specifically, the various articles look at how value is created, distributed and sustained across financial services. In turn, the submissions are grouped into three broad themes.

Technological transformations are explored in terms of how these can bolster or hinder value dynamics if not managed effectively. A number of secular shifts are also discussed – these being long-term changes that are impacting value dynamics in the sector. Finally, structural challenges are highlighted that emphasize the importance of sticky, tricky social and behavioral issues that surround the execution of financial services.

Overall, these themes highlight challenges and opportunities in the sector and encourage us to think differently.

It has been a pleasure working on this issue with such a fantastic and diverse array of different contributors.

A handwritten signature in black ink, appearing to read "C. W. Spence".

Professor Crawford Spence

King's College London

Nature as an asset class:

Unlocking financial value in a changing world

Author | [Eoin Murray](#) | CIO Rebalance Earth

Abstract

Existing approaches to sustainable finance all too often view nature and ecosystem services from a cost perspective. Dominant frames around ESG go further by emphasizing the value that nature can deliver, but generally within quite constrained parameters that don't move us significantly beyond the status quo. This article presents a more penetrating perspective that advances the notion of nature as a genuine asset class that is now a practical necessity rather than a theoretical nicety. In turn, this leads to a view of nature as the infrastructural backbone of resilient economies and financial markets.

1. Introduction: The case for valuing nature

Ecosystem services – from pollination powering agriculture to forests soaking up carbon – are worth a staggering \$125-140 trillion annually to the global economy [Costanza et al. (2014)], dwarfing the GDP of any single nation. Yet these natural engines remain ghosts in most financial models, unpriced and undervalued while they quietly prop up markets. In the U.K. alone, the Green Finance Institute warns that nature's decline could erase up to 12% of GDP [Ranger and Oliver (2024)] – a hit that makes the 2008 crash look tame. Meanwhile, philanthropy and government reports, like the U.K.'s 2024 Food Security Report [DEFRA (2024)], scramble to patch the gaps, funding conservation and flagging risks to food and water systems. But here's the rub: the \$100 trillion financial services industry – banks, insurers, pension funds – has barely scratched the surface of nature's potential as a driver of value, not just a cost to mitigate.

This disconnect is no longer tenable. Climate shocks, like London's 2022 heatwave or 2021 floods [Howard Boyd (2024)], and biodiversity losses, from pollinators to soil health, are slamming economies with real costs – costs that Exeter University's research says current climate scenarios woefully underestimate [Trust et al. (2025)]. Treating nature as an asset class isn't just an ethical moonshot; it's a financial frontier that promises to redefine risk, return, and resilience for the 21st century. This paper explores why and how financial leaders must act – drawing on emerging frameworks, market innovations, and hard data – to turn nature from a silent partner into a cornerstone of value creation. The stakes are high, and the clock is ticking.

2. Defining nature as an asset class

Nature isn't just a backdrop for human activity – it's a portfolio of assets with intrinsic value, measurable returns, and strategic potential for financial markets. Treating ecosystems like

wetlands, forests, or coral reefs as an asset class mirrors how we handle real estate or infrastructure: they have tangible worth, generate returns (e.g., flood protection, carbon sequestration, crop pollination), and require active management to sustain their utility [Ranger et al. (2023)]. For instance, a mangrove forest isn't just a habitat and a nursery – it's a natural barrier reducing flood damage, potentially saving billions in insurance claims, as seen in Bloomberg's case studies on nature-related financial risks [Bloomberg Intelligence (2023)]. It's also a significant sequester of carbon.

The framework for this shift is taking shape. The Natural Capital Protocol offers a standardized way to measure ecosystem services [NCC (2016)] – think water purification or pollination – while the Taskforce on Nature-related Financial Disclosures (TNFD) pushes companies to report nature's impact on their operations and vice versa [TNFD (2023)]. Pioneering efforts like the Intrinsic Exchange Group's Natural Asset Companies (NACs) are even exploring listing ecosystems on stock exchanges, turning biodiversity into tradable value. In the U.K., UKRI's work on integrating finance and biodiversity hints at similar ambitions, aiming for a “nature-positive” future where ecosystems are as bankable as bonds. Yet, this isn't just about numbers – nature's value extends beyond markets, raising questions about cultural, spiritual, and ecological worth that defy pure financial metrics [IPBES (2024)].

3. Trends driving nature's financialization

Nature's march into finance isn't a fluke – it's propelled by a perfect storm of regulation, markets, tech, and investor appetite. It's also propelled by real world experience and the increasing frequency of extreme weather events, which are with us for good now. Here's what's fueling the shift.

Regulatory push: Governments are turning up the heat. The E.U. Taxonomy for Sustainable Activities [EC (2020)] and the Taskforce on Nature-related Financial Disclosures (TNFD) are forcing firms to map their exposure to nature risks [TNFD (2023)] – think supply chain disruptions from deforestation or water stress. In the U.K., the 2024 London Climate Resilience Review calls for urgent adaptation investment [Howard Boyd (2024)], while the COP15 biodiversity framework (echoed in UKRI's nature-positive finance work) sets global targets that ripple into national policy. Even the U.S. SEC's climate disclosure rules were nudging firms to peek beyond carbon at ecosystems. It's not optional anymore – regulators are making nature a boardroom issue. And in a few rare, pioneering instances, nature also has a seat at that table.

Market innovation: New financial toys are popping up fast. Blue bonds, like the World Bank's \$150 million Seychelles deal, are channeling cash into ocean health, while Australia's biodiversity offset markets show how to monetize conservation [World Bank (2018)]. The Intrinsic Exchange Group's Natural Asset Companies (NACs) are pushing the envelope further, aiming to list ecosystems on stock exchanges – controversial, sure, but a sign of where things are headed. The Green Finance Institute's advisory group [Ranger and Oliver (2024)] also pitches adaptation-linked instruments, blending resilience with profit. It's not that we didn't value nature before – it's simply that the value we assigned to nature was zero. Markets are catching on: nature is getting an appropriate price tag, with it's biophysical, social and associated health benefits much better understood [IPBES (2024)].

Technological enablers: Tech's the secret sauce. AI and satellite imagery – like Global Forest Watch tracking deforestation in real-time – let investors see nature's pulse with precision. Ortec Finance's

climate risk models for U.K. pension funds lean on these tools to flag long-term threats [Ortec Finance (2024)], while Exeter's critiques of outdated scenarios highlight how tech can fix blind spots [Trust et al. (2023)]. Data's turning fuzzy ecosystem value into hard numbers – think carbon sinks measured in tons or flood protection in avoided losses.

Investor demand: Money is talking louder than ever. “ESG” assets, despite recent seismic political shifts, are on track to hit \$50 trillion in 2025 [Bloomberg Intelligence (2023)], and nature-focused funds are stealing the spotlight. Institutional giants – like BlackRock's \$1 billion tie-up with Conservation International – are betting on nature-based solutions, driven by clients who want returns and a planet that doesn't sink [BlackRock (2025)]. The actuaries' “Planetary Solvency” [Trust et al. (2025)] puts it best: ignoring nature risks isn't just bad ethics – it's bad business. Demand is there too; and supply is racing to keep up.

Together, these trends are dragging nature beyond just the philanthropy bucket and onto the balance sheet. The question's not if, but how fast – and who'll lead.

The momentum towards recognizing nature as an asset class has accelerated in recent weeks with groundbreaking announcements from major financial institutions. Goldman Sachs, managing \$1.3 trillion in assets, launched a \$500 million biodiversity bond fund, investing in both labeled and unlabeled corporate bonds across developed and emerging markets. This fund targets bonds that directly fund biodiversity-related projects or are issued by companies generating revenue aligned with biodiversity protection and restoration, adhering to four sustainable development goals (SDGs). This move signifies a maturation of nature finance, where indirect financial incentivization based on nature investments becomes feasible.

Similarly, Norges Bank Investment Management (NBIM), overseeing the \$1.6 trillion Norwegian sovereign wealth fund, disclosed its climate and nature disclosure methodology, applying it to 96% of its portfolio. This methodology evaluates companies on their policies, strategies, risk management, stakeholder engagement, and disclosure related to biodiversity and ecosystems. NBIM's approach, which can lead to divestment if companies fail to address material nature issues, sends a strong signal to global boardrooms about the necessity of integrating nature into corporate strategies.

BlackRock, the world's largest asset manager, released an opinion paper on natural capital [BlackRock (2025)], highlighting the current underpricing of natural capital as both a risk and an opportunity. With “over half” (in reality, “all”) of the market cap on the world's largest stock exchanges dependent on nature, BlackRock's stance emphasizes the need to include all forms of capita – economic, human, and natural – in financial markets to ensure sustainable growth.

These developments are complemented by the alignment of Japanese accounting standards with international sustainability frameworks. The Sustainability Standards Board of Japan (SSBJ), closely linked to the ISSB, has included specific mentions of nature and biodiversity in its standards for publicly-listed companies on the Tokyo Stock Exchange. This marks a critical step in recognizing thriving nature as an essential asset for business and economies.

Moreover, there is growing policy support for nature-based solutions in flood risk management. A recent U.K. report, *From Risk to Resilience*, recommends that the upcoming Spending Review allocate at least £1.5 billion annually for flood risk management, explicitly supporting both structural and natural flood protection methods [Norman et al. (2025)]. This underscores a shift towards recognizing nature-based approaches as

essential for building resilience against climate-related risks, aligning with global frameworks like the E.U. Taxonomy and TNFD.

4. Nature's capacity to act as a revenue-generating asset

Pricing assets for revenue generation involves placing a value on future income streams, typically using discounted cash flow (for ecotourism or PES contracts, for example) or market prices (for carbon and biodiversity). Such a system is evolving slowly but is not without its challenges. Green bonds are typically used for funding environmental projects but arguably do not generate revenue from nature; rather, they finance conservation or renewable energy initiatives. Nature assets, to be truly revenue-generating, need predictable income. What might that look like?

Cities already pay landowners to ensure clean water, generating revenue through payment for ecosystem services (PES). New York City, for example, found it handsomely cost-effective to protect the Catskill watershed, saving billions compared to a treatment facility, with landowners earning revenue through easements. Similarly, Forest Resilience Bonds fund nature restoration, with beneficiaries like utilities paying back investors for reduced wildfire risks. These activities are clearly asset-like, with predictable income from well-defined contracts. Being able to move beyond nature's commoditization feels critical to it playing its proper part in our economic system.

5. Challenges in treating nature as an asset class

Turning nature into a financial asset isn't a slam dunk – it's riddled with hurdles that could trip up even the savviest executive. First, valuation is a minefield. Unlike carbon, which has a standardized price per ton, biodiversity lacks a universal unit of measure. How do you price a pollinator's role

in a wheat field or a wetland's flood protection? The Natural Capital Protocol and TNFD are trying, but consensus remains elusive, leaving investors wary of unreliable data – exacerbated, as Exeter University's research notes, by climate models that underplay nature's risks [Trust et al. (2023)].

However, there are promising developments like the SEED Biocomplexity Index from the Crowther Lab, which aims to provide a standardized metric for biodiversity assessment [Fournier de Lauriere et al. (2023)]. With its underlying nine essential biodiversity variables, this state of nature framework seeks to offer both disaggregated and aggregated information. This index could potentially offer a way forward for globally standardized financial valuation of nature, integrating genetic, species, and ecosystem diversity using field data and satellite imagery, though it remains in development.

Then there's the moral quagmire. Commodifying nature risks turning sacred ecosystems into spreadsheets, sparking backlash from environmentalists who fear “greenwashing” or the neglect of non-monetizable but equally important areas – like arid lands with low carbon value but high cultural significance to Indigenous communities [WWF (2025)]. Critics, as hinted in the Green Finance Institute's nature-risk reports, warn this could prioritize profit over preservation, skewing investment toward flashy projects (e.g., carbon forests) while ignoring less “sexy” but critical ecosystems [Ranger and Oliver (2024)].

Financial hurdles add fuel to the fire. It is a sad truism that our myopic view is incredibly short-term. Natural assets often lock capital into decade-long cycles – think reforestation or coral restoration – clashing with the quarterly focus of most portfolio managers. Liquidity is difficult too: you can't sell a forest tract overnight like a stock. Ortec Finance's analysis of U.K. pension funds flags this as a structural risk [Ortec Finance (2024)], while the actuaries' “Planetary Solvency”



Turning nature into a financial asset isn't a slam dunk – it's riddled with hurdles that could trip up even the savviest executive.

critique [Trust et al. (2025)] underscores how long-term nature investments demand a shift in mindset that many firms aren't ready for. Until these barriers fall, nature's ascent as an asset class will remain a work in progress. But this is not an insurmountable problem – pension fund assets, with the long duration characteristic of their liabilities, are arguably extremely well suited.

6. Opportunities for financial services

Treating nature as an asset class isn't just a risk mitigator – it's a haven for financial innovation. First, new products are blooming. Nature-based insurance, like parametric policies tied to mangrove health, could pay out when ecosystems degrade, blending risk management with conservation – think payouts for flood protection losses if wetlands vanish, as hinted in the Green Finance Institute's adaptation advice [Ranger and Oliver (2024)]. Biodiversity credits are heating up too, with pilot projects in Colombia and the U.K. showing how companies can offset nature impacts while generating returns. They may not be perfect, but the risk of doing nothing is surely far greater. Blue bonds, like the aforementioned World Bank's \$150 million Seychelles deal, are channeling cash into ocean health [World Bank (2018)], while green bonds tied to reforestation offer steady yields for investors.

Reputation is another potential jackpot. Firms embracing natural capital can ride the green wave – data shows companies with strong nature and climate credentials enjoy 10-20% higher valuations

[McKinsey (2023)]. In the U.K., the London Climate Resilience Review's push for adaptation signals a market where nature-savvy players stand out [Howard Boyd (2024)], especially as regulators like the TNFD demand transparency. Collaborations, like BlackRock's \$1 billion partnership with Conservation International, prove the ROI: nature-based solutions scale impact and burnish brands, drawing in institutional investors hungry for both profit and planet.

Also, there's the untapped market of nature-positive returns. UKRI's biodiversity finance initiative suggests ecosystems can deliver long-term value – think carbon credits, water purification, or tourism revenue from restored landscapes. For financial services, this isn't just about dodging losses (e.g., Ortec Finance's (2024) pension fund risks); it's about capturing upside in a world where nature's health drives economic stability.

Beyond biodiversity bonds, opportunities exist in financing natural flood management (NFM) projects. A recent report on NFM emphasizes the need for innovative financing mechanisms to scale these initiatives, which offer multiple benefits including flood risk reduction, biodiversity enhancement, and carbon sequestration [Morris et al. (2025)]. Financial institutions can lead by developing blended finance models and leveraging ecosystem service stacking to make NFM projects more attractive to investors.

Another area of opportunity lies in financing nature-based flood management projects. The From Risk to Resilience report highlights the Leeds Flood Alleviation Scheme as a successful example, where traditional engineering was combined with natural flood management techniques to protect communities and deliver economic benefits [Norman et al. (2025)]. Financial institutions can play a crucial role by investing in these projects, either directly or through partnerships with local authorities and water companies. The report

notes that every £1 invested in flood prevention, including natural methods, can prevent £8 in future flood damages, offering a compelling economic case for such investments.

Furthermore, the mandate for Sustainable Drainage Systems (SuDS) in new housing developments in high-risk areas presents an opportunity for private sector involvement in nature-based infrastructure. Financial services can develop products and services to support these requirements, such as green bonds or impact investments focused on sustainable drainage solutions.

7. Nature as green infrastructure: The backbone of resilient economies

Nature's role as green infrastructure is crucial for providing services such as coastal erosion protection, flood mitigation, drought resilience, and water quality improvement. Recent events in Valencia, Spain, and Porto Alegre, Brazil, starkly illustrate the consequences of neglecting these natural systems [McGovern and Branford (2025)].

In October 2024, Valencia experienced catastrophic flooding when torrential rains, equivalent to a year's worth of precipitation, fell in just eight hours. The urban area, situated on a flat alluvial plain around a riverbed, was particularly vulnerable. The flooding resulted in over 200 deaths and substantial property damage, exacerbated by poor preparation and disaster response. Satellite imagery documented the extent of the devastation, highlighting the need for resilient water infrastructure [McGovern and Branford (2025)].

Similarly, in May 2024, Porto Alegre faced record rainfall and flooding due to El Niño and high Atlantic temperatures, receiving three times the average rainfall in a short period. The Guaíba River breached its banks, causing severe flooding in the

city. These events underscore the importance of maintaining and restoring natural systems like wetlands and floodplains, which can absorb excess water and reduce flood risks [McGovern and Branford (2025)].

Natural flood management (NFM) has been proven to effectively mitigate flood impacts by reducing peak flows in both urban and rural settings. A recent report by Stantec for the Royal Society of Wildlife Trusts and RSA Insurance highlights that NFM not only reduces flood risks but also delivers significant economic, social, and environmental benefits [Morris et al. (2025)]. These include enhanced biodiversity, improved mental health, carbon sequestration, and better water quality. Cost-benefit analyses of Wildlife Trust projects showed positive ratios, with benefits increasing over time (e.g., £1:4.47 over 10 years, rising to £1:10.79 over 30 years).

Communities near NFM projects report reduced flood risks and increased recreational opportunities, underscoring the social benefits of these initiatives. However, the report notes that public funding for NFM is minimal compared to traditional flood defences, and private investment is hindered by barriers such as lack of confidence in NFM's effectiveness and insufficient data [Morris et al. (2025)]. To address these challenges, the report recommends mainstreaming NFM in all flood and coastal erosion risk management projects, developing standardized data collection frameworks, and creating mechanisms to attract private investment by leveraging multiple benefit outcomes.

Nature's role in flood mitigation is increasingly recognized, as evidenced by successful projects like the Leeds Flood Alleviation Scheme [Norman et al. (2025)]. This £200 million initiative combines traditional engineering with natural flood management techniques, protecting communities while unlocking £774 million in economic growth and creating over 3,000 jobs. According to the

From Risk to Resilience report, such investments deliver a compelling return, with every £1 spent on flood prevention (including natural methods) preventing £8 in future damages. Additionally, mandating Sustainable Drainage Systems (SuDS) for new housing in high-risk areas presents an opportunity for private sector involvement in nature-based infrastructure, further scaling these solutions.

Financing resilient and sustainable water infrastructure is critical. The U.S. Environmental Protection Agency (EPA) emphasizes the need for innovative financing mechanisms to support water infrastructure projects that enhance resilience and sustainability. Such investments not only protect communities from natural disasters but also provide long-term economic benefits by reducing the costs associated with disaster recovery [van't Klooster and Prodani (2025)].

Asset managers like Rebalance Earth (2024) are leveraging payments for ecosystem services (PES) to fund green infrastructure projects. By connecting investors with initiatives that restore and conserve ecosystems, these platforms ensure that nature's services are maintained and enhanced, offering both environmental sustainability and financial returns.

8. Practical roadmap for financial executives

Financial leaders can't afford to sit on the sidelines – so here's a clear, four-step path to quickly integrate nature into their strategies:

1. **Assess portfolio exposure to nature-related risks:** start with the TNFD's disclosure framework to map how biodiversity loss and climate change hit your assets. Use tools like Ortec Finance's climate risk models or Exeter's updated scenarios to spot vulnerabilities – whether it's water stress for utilities or supply chain disruptions from deforestation. The U.K.'s 2024 Food Security Report and Green Finance

Institute's nature-risk assessments offer U.K.-specific data to benchmark against.

2. **Pilot investments in nature-based products:** dip your toes into green and blue bonds, biodiversity credits, or natural asset companies (NACs) via the Intrinsic Exchange Group. Test parametric insurance tied to ecosystem health or fund reforestation projects with measurable returns, as seen in Bloomberg's case studies. Start small, scale smart – UKRI's biodiversity finance work provides models for nature-positive pilots.
3. **Explore partnerships for nature-based solutions:** collaborate with local authorities, water companies, and environmental organizations to co-fund and implement nature-based flood management projects. Leverage public funding streams, such as those recommended in the From Risk to Resilience report (e.g., £1.5 billion annually for flood risk management), to de-risk investments and enhance project viability.
4. **Develop financial products for sustainable infrastructure:** create innovative financial instruments, like green bonds or blended finance models, that support investments in nature-based solutions for flood risk management and other environmental challenges.

This roadmap isn't just about compliance – it's about seizing a first-mover advantage in a nature-driven economy.

9. Conclusion: A call to action

In conclusion, the transformation of financial services through the recognition of nature as an asset class is not just a theoretical concept but a practical necessity, as evidenced by recent developments and reports. The From Risk to Resilience report underscores the critical role of nature-based solutions in building resilience against climate-related risks, offering both

environmental and economic benefits. Financial leaders who embrace this paradigm shift will not only contribute to a sustainable future but also position their institutions for long-term success in a world where nature's value is increasingly acknowledged and integrated into financial decision making.

By assessing risks, piloting investments, scaling through partnerships, and advocating for policy changes, financial executives can lead the way in redefining the relationship between finance and the planet. The time to act is now, as the opportunities for sustainable value creation through nature are vast and the stakes are higher than ever.

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