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NATURE, PEOPLE, AND SUSTAINABLE DEVELOPMENT: WHY THE NEXT DECADE MUST BE DIFFERENT

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This volume is about the relationship between nature, people, and prosperity—and why the way the world currently accounts for that relationship is failing all three. Its central claim is easy to state and harder to act upon: The living systems that our economies and societies treat as a backdrop are in fact the foundation on which development rests. To see why that matters, and what is at stake in getting it wrong, it helps to begin not with a definition but with a place.

Imagine a country that has vast forests that have been feeding timber, palm oil, and soy into global supply chains for decades. It has rivers that once flooded predictably, seasonally, in a way that farmers had learned over generations to plant around. It has coastlines rich with fish and mangroves that once held the shore in place.

It also has peoples who have lived inside these ecosystems for longer than the state has existed—who have their own names for every river bend and seasonal shift, who carry in their practices and their knowledge systems a relationship with place that is, among other things, a form of ecological management. Forests that look wild to outsiders are actively tended. Fisheries and estuaries that seem natural are carefully governed and protected.

Now imagine that a newly elected leader is told that the immediate future will look very different. Much of the original forests are gone now, and the rest are being actively degraded. The rivers no longer flood on schedule—they alternate between catastrophic inundation and drought, because all the vegetation and the deep soil that once regulated the water cycle has been stripped away. Rain now runs straight off degraded hillsides and into towns that were not built for floods like these. On top of that, climate patterns are shifting. Last year's harvest was the worst in a generation. The fishing communities along the coast are in crisis: The mangroves that previously nursed young fish have been cleared for commercial shrimp farms, the coral bleached by warming waters, and the daily catch is a fraction of what it once was. And the Indigenous communities who understood these systems most intimately—who in many cases actively resisted their destruction, sometimes at enormous personal cost—have watched not only their livelihoods but their worlds disappear. Landscapes that languages were built around no longer exist. Species that played central roles in ceremonies have collapsed. A relationship with the living world, accumulated over centuries, for which there is no market price and no line in any accounting or development ledger, is rapidly disappearing. And once it is gone, it is simply gone.

The leader is told that people are on the move—from coasts to cities, from rural areas to urban peripheries that are themselves flood-prone and underserved. The government is trying to oversee all this. It is borrowing to rebuild roads washed out by floods that now arrive every year instead of every few decades, to support farmers after failed harvests that are increasingly common, to manage the constant displacement. It is also trying to stay economically afloat in a geopolitical context where spikes in the cost of essential imported inputs like energy and fertilizer have become the norm. But its credit rating has been sliding because the international financial system can see the volatility in its agricultural export revenues, can see the climate exposure of its infrastructure, and prices the risk accordingly. The country pays more to borrow but has less to invest in resilience to adapt to the threats that are undermining its credit in the first place. The government feels compelled to continue to sell the timber from its forests and expand agriculture into sensitive ecosystems to generate the revenue that servicing its mounting debt requires.

It is a vicious cycle. Ecological collapse feeds economic fragility. Economic fragility forecloses the choices that might slow that collapse. And the warming planet accelerates both.

This is not a hypothetical tale. It is Indonesia—and it is also Zambia, Ecuador, the Philippines, and Mozambique. It is most of the world's lower- and middle-income countries that sit on significant natural wealth: The places that did the least to destabilize the climate are paying the highest price for it, while simultaneously being pushed by debt and development pressure to liquidate the natural systems that are their only real buffer against what is coming. None of this, it should be said, is the exclusive predicament of poorer countries. The same climatic and ecological shocks now strike wealthy countries—drought and heat crippling harvests in Spain, floods overwhelming towns across Italy and the United Kingdom, stranded assets accumulating in California. What differs is not exposure to the underlying disruption, which is universal, but the financial and geopolitical buffers available to absorb it: preferential lending, more diversified economies, and the accumulated advantages that let some societies rebuild while others fall further behind. The predicament is global; it is the capacity to withstand it that is unequally distributed, along lines that remain, in many places, distinctly colonial.

Why is this happening, and what can be done? These are the questions that this volume tries to address. Three propositions run through the chapters that follow. The first is that nature and ecological integrity are not one sector of development among many, but a precondition for all of it. The second is that our prevailing economic and financial system rewards the liquidation of nature and penalizes its protection. The third is that a credible post-2030 agenda will therefore have to change institutions and incentives themselves, not simply bolt stronger conservation targets onto a framework that still treats nature as external to the economy. A theme that recurs across the chapters that follow is that none of this can be achieved through markets alone. Capturing nature's value by pricing or commod-

ifying it can just as easily accelerate its destruction as arrest it; whether it conserves and regenerates depends on strong regulation, well-designed incentives, and credible accountability and sanctions working in concert—an alignment hardest to achieve precisely where it matters most, in states already strained by debt and weak institutions.

In the first part of the volume, we ask what we should protect. After all, the current reality is that nature largely has recognizable “value” in our economic system only when it has been destroyed—for example, once it has been transformed into commodities or real estate. This destruction is no longer a slow-moving background threat to societies and economic development—it is arriving, now, as economic crisis, food system failure, fragility, and climate breakdown. It is affecting all countries, but the costs are especially onerous for the poorest countries in the world, where natural capital accounts for over half the wealth. The World Economic Forum suggests that over half of global GDP is “moderately or highly dependent on nature and its services.”¹ The scale of exposure is vast.

The second part of the volume asks how we can incentivize change to restore and protect nature using market innovations. Some of these innovations lead to more efficient and equitable outcomes by capturing the value provided by nature and distributing this value to customary land and nature owners. But other innovations have to do with enforcement of regulations and addressing the political economy of environmental crime.

The volume then looks forward. Having asked what to protect and how to incentivize its protection, it turns to where these efforts could lead: the possibility that countries rich in biodiversity might leapfrog toward green industrialization, making healthy ecosystems the basis of a new, more resilient and equitable development model. The question this raises—and the one on which the post-2030 agenda will ultimately be judged—is not whether to build a more regenerative and resilient economic system, but how to shape it, so that the communities and countries that steward the world’s natural wealth share in the value it creates. Threaded through that question is a hard economic reality this overview returns to later but is worth naming at the outset: Building a regenerative economy demands significant upfront investment, and the countries that most need it face the tightest fiscal space and the highest costs of capital—so the sequencing of reform, and who bears its early costs, matters as much as its direction.

The Sustainable Development Goals and the world that wrote them

Nature and economic development have long been considered deeply intertwined. But most theories of economic growth that evolved in the 20th century focused on human and physical capital accumulation, on technologies, and on good governance and institutions. Despite ad hoc efforts, measures of natural capital, or trends in its use, have not been systematically included in the economic models used by central bankers or finance ministers. Meanwhile, ecological science seemed largely concerned with describing slow processes of little relevance to the here-and-now priorities of reductions in poverty, infant and maternal mortality, hunger, and illiteracy. The longer time frames of ecological processes meant they got short shrift—\$100 in benefits in 20 years is only worth \$15 today at a 10% discount rate, so many of the concerns about natural capital depletion and overstep of planetary boundaries could be safely ignored by economists and political leaders with far shorter time horizons.

1 World Economic Forum (2020), 8.

The disconnect between the environmental and economic development camps began to change in earnest with the universal approval of the Sustainable Development Goals (SDGs) in 2015.² Pope Francis' *"Laudato Si',"* issued three months before the summit, gave moral language to delegations wanting stronger nature and climate commitments—and almost certainly contributed to the atmosphere of ambition that made 2015 unique: a single calendar year that produced the Addis Ababa Action Agenda, the SDGs, and the Paris Agreement in quick succession.

The Paris Agreement and the parallel advance of the Convention on Biological Diversity—which would eventually produce the Kunming-Montreal Global Biodiversity Framework in 2022—reflected a growing recognition that climate and nature were not environmental sideshows but central to economic stability and human welfare. That recognition, however, had yet to fully penetrate the SDG architecture itself. Nor did it influence the Addis Ababa Action Agenda, where nature and climate were treated as tangential to discussions around reforming the global financial and economic architecture. The result was a 2015 SDG settlement that was historic in its ambition and structurally compromised in the same breath—nature was acknowledged everywhere and meaningfully embedded nowhere.

Where nature landed in the SDGs—and why

The 2015 negotiations marked the first time that linkages between climate and development were formally enshrined in both the development and the climate agreements.³ That was genuinely new. But how nature and climate showed up in the goals reflects the fault lines of the negotiation as much as any integrated vision.

Climate got its own goal—SDG 13—but it was conspicuously thin. This was deliberate at the time, as climate goals were to be set by a United Nations Framework Convention on Climate Change (UNFCCC) process taking place in Paris in December 2015, and so SDG 13 was essentially a placeholder that deferred to whatever the Paris Agreement would produce. It acknowledged urgency without specifying quantitative goals for limiting warming, without binding emissions commitments, and without the finance architecture that developing countries were demanding.⁴ It was more of a political agreement to keep two processes from colliding, rather than a substantive integration of climate into development thinking.

Nature got two goals: SDG 14 (Life Below Water) and SDG 15 (Life on Land). Both were framed in the language of conservation and sustainable use—to protect, restore, and sustainably manage. They did not, however, treat nature as fundamental for economic and human development. SDG 15 in particular has been criticized for ignoring vital connections between human and nonhuman nature, and for failing to center the rights and knowledge of Indigenous Peoples and local communities—the very communities that most depend on, are often most knowledgeable about, and remain the historical custodians and stewards of, the ecosystems that this goal was meant to protect.⁵

2 The intellectual and diplomatic roots of this integration have a deep history. The 1987 Brundtland Commission report, *Our Common Future*, brought “sustainable development” into mainstream policy language, and the 1992 Rio Earth Summit (the United Nations Conference on Environment and Development) produced Agenda 21 and the Rio Declaration and opened both the Convention on Biological Diversity and the United Nations Framework Convention on Climate Change for signature—an explicit attempt to bind the environment and development agendas together. The SDGs emerged in 2015 as a merger of the Rio+20 mandate for an open working group to propose a set of sustainable development goals with the time-bound target methodology of the Millennium Development Goals.

3 United Nations (2015a; 2015b).

4 Kanie and Biermann (2017).

5 Krauss (2022).

Frameworks treating communities as rights-holders rather than beneficiaries already existed—the Convention on Biological Diversity’s 2010 Nagoya Protocol on access and benefit-sharing among them—but sat outside the SDG process and were never meaningfully integrated into it. Ultimately, by treating Indigenous Peoples as beneficiaries to be considered rather than as rights-holders and knowledge-custodians, the SDGs reproduced the same extractive logic they were ostensibly designed to address.

The result was a structural problem baked into the SDGs from day one: Nature and climate sat in their designated goals while the goals for food, water, cities, health, poverty, and growth proceeded in parallel lanes, as though ecological systems were external context rather than the base everything else rests on. This was not an accidental oversight—it mirrored precisely how the broader economy had long treated nature: as an externality to be managed at the margins, rather than the system within which all economic activity takes place. The consequences were predictable and have since been confirmed: Negative trends in nature will substantially undermine progress toward 80% of all assessed SDG targets.⁶ The framework was designed to address a crisis that it has been simultaneously reproducing through its very structure.

A mirror held up to the economy

The treatment of nature was a problem that the SDGs inherited from the world that wrote them—a reflection of sorts.

For most of the 20th century, mainstream economics treated nature as a backdrop—a supplier of raw materials, a sink for waste when needed, and otherwise irrelevant to the models that governed investment decisions, credit assessments, growth projections, and development planning. GDP growth was the only important signal; what happened to soils, fisheries, watersheds, and forests in the process of generating it was, in the technical sense, an externality.⁷ A country could liquidate its forests, deplete its fisheries, destroy its grasslands, and degrade its soils to exhaustion—and every transaction would register as positive economic activity up until the moment the system collapsed.

The SDGs reproduced this blind spot. The logic—that a society and economic system built on destroying natural systems could not continue to grow indefinitely without catastrophic consequences—had not landed yet in the mainstream political imagination. Nor was it reflected in the corporate accounting, sovereign credit-ratings methodology, development finance plans, and national income statistics carried forward into the world’s most ambitious development framework.

The scale of what this gap means in practice has since been quantified. According to the most recent “State of Finance for Nature” report by the United Nations Environment Programme (UNEP), close to \$7.3 trillion flowed in 2023 into activities that directly harm nature—from fossil fuel subsidies to investments in high-impact sectors like utilities, construction, and food—equivalent to roughly 7% of global GDP.⁸ In 2022, investments in nature-based solutions totaled approximately \$200 billion, just 2.5% of all nature-related finance flows.⁹ The global economy is not merely failing to invest adequately in nature—it is actively financing its destruction, at colossal scale, year after year. The Earth itself is keeping score: The most recent estimate is that we will reach roughly 2.7-2.9°C warming by

⁶ IPBES (2019), 15.

⁷ Dasgupta (2021).

⁸ UNEP (2023b, 2026); The 2026 edition updates the figure to \$7.3 trillion.

⁹ UNEP (2023b), 26.

the end of the century without dramatic shifts in current policy.¹⁰ Scientists have now confirmed that seven of the nine planetary boundaries—the biophysical limits within which humanity can safely operate—have been breached, a finding that puts a harder, more urgent frame around what it means for the SDGs to be off track.¹¹

Naming and quantifying the scale of the problem is not defeatism. It is the precondition for getting serious about solving it.

What is changing

Ten years on, the debate has moved forward—and so, more importantly, have the real economy, geopolitics, and the financial system.

The most consequential shift may be the one happening in low- and middle-income economies. For countries endowed with biological abundance—the vast forest systems of the Amazon, Congo Basin, and Indonesia, the marine ecosystems of coastal West Africa, the extraordinary biodiversity of Latin America’s Cerrado and wetlands—nature has historically been valued primarily as something to extract and export in raw form. The bioeconomy offers a different proposition: that thriving ecosystems can be the source of a new generation of fertilizers, fuels, materials, pharmaceuticals, and food products, generating far more local economic value per hectare than the commodity extraction models they replace, while keeping ecological systems intact. This is a win-win proposition—for nature, for climate, and for the people who depend on both. That promise, however, is not automatic, and the term itself conceals a fault line. As Monique Atouguia and Dorothy Maseke argue in their chapter below, a regenerative, circular, and rights-respecting bioeconomy—one that keeps ecosystems intact and returns value to the communities that hold them—is a fundamentally different proposition from a biomass-intensive model that reproduces the old extractive structures using biological inputs rather than fossil ones. Which of these the coming decade builds is not settled by the technology; it is a matter of design, rights, and rules. These issues are taken up by Robert Muggah and Ilona Szabó de Carvalho in their discussion of why the inability to crack down on illegal activities is such an important structural constraint on any nature-positive market.

The momentum is real. Under Brazil’s 2024 G20 presidency, the G20 Initiative on Bioeconomy produced the first plurilateral framework for bioeconomy development, defining it as an innovative productive paradigm—not a supplement to the fossil-fuel-based economy, but a potential successor.¹² South Africa continued the momentum under its subsequent G20 presidency, and at COP30 in Belém, the Bioeconomy Challenge was launched as a formal workstream under the COP Action Agenda—the first time bioeconomy had been positioned as a central strategic objective in the conference’s history.¹³ NatureFinance and the World Bioeconomy Forum estimate the global bioeconomy could reach \$30 trillion in value by 2050, up from \$4 trillion in 2025.¹⁴

For lower- and middle-income countries, this represents more than an economic opportunity. It is a potential re-framing of the development bargain itself: moving from a model that requires liquidating natural capital to service

10 UNEP (2021), xvi; UNEP (2023a), xv. The 2023 edition updates the figure to 2.9°C (range is 2-3.7°C).

11 PBScience (2025).

12 G20 (2024); OECD (2026).

13 NatureFinance (2025).

14 World Bioeconomy Forum (2022). The \$30 trillion by 2050 projection is cited in NatureFinance and Getúlio Vargas Foundation (2024).

debt, to one in which healthy, diverse ecosystems are the basis of sustained and locally distributed prosperity, innovation, and growth. The transition is not automatic—it requires finance, infrastructure, governance, and market access—but the direction is becoming clearer. China’s 14th Five-Year Plan made ecological civilization one of its six overarching national development goals—embedding ecological health not as an environmental annex to growth policy, but as a constitutive dimension of what development means for the world’s second-largest economy.¹⁵ That is a signal of a different order than a voluntary pledge. The reframing has deepened: China’s planning has begun to treat the bioeconomy itself as a strategic industrial pivot—a bid to reduce dependence on imported fossil inputs, secure supply chains, and position biotechnology as a future engine of growth and a matter of national security.¹⁶

In the financial system, the Network for Greening the Financial System (NGFS)—the body representing central banks and supervisors from more than 95 countries—released its final framework on nature-related financial risks in 2024, concluding that biodiversity loss is as serious a risk as climate change.¹⁷ The Taskforce on Nature-related Financial Disclosures has developed a voluntary reporting framework now being adopted by financial institutions globally.¹⁸ The gap between acknowledgment and widespread implementation is real, but the direction of travel in financial regulation is nonetheless meaningful.

On sovereign debt—historically the most nature-blind corner of global finance—economists have produced the world’s first biodiversity-adjusted sovereign credit ratings, demonstrating that if nature loss were factored into existing rating methodologies, 26 countries would face downgrades increasing their annual debt service costs by up to \$53 billion.¹⁹ Existing analysis does not yet fully integrate soils, watersheds, coastal protection, and climate regulation, where the sovereign debt implications of nature loss become far larger.

The Kunming-Montreal Global Biodiversity Framework—the 2022 agreement sometimes called the Paris Agreement for nature—established a global target of protecting 30% of land and ocean by 2030 and mobilizing \$200 billion for biodiversity annually, providing an agreed reference framework that had been entirely absent from the SDGs.²⁰

And in the spaces where the SDG framework was weakest—the treatment of Indigenous Peoples and local communities—there is a slow but real power shift occurring. Across Latin America, Africa, and the Pacific, Indigenous-led governance models are advancing legal frameworks that recognize rights of nature, the standing of ecosystems, and the authority of communities whose prosperity has always been understood as inseparable from the health of the land and water they inhabit. Bolivia and Ecuador have enshrined rights of nature in their constitutions. New Zealand granted the Whanganui River legal personhood at the insistence of Māori communities.²¹ The new Tropical Forest Forever Facility launched by Brazil aims to reward Indigenous stewards for keeping tropical forests standing. These are not simply cultural achievements. They are alternative economic architectures, tested over generations, built on a premise the dominant paradigm is only beginning to grasp: that human flourishing and ecological health are not in tension but expressions of the same thing. As David Cotacachi, Fany Kuiru, Tatiana Schor, and Verónica Tejerina show in their chapter in this volume, Indigenous territories—particularly across Amazonia—consistently sustain higher ecosystem integrity than lands under other forms of management, which makes recognizing Indig-

15 China (2021); Liu, Liu, and You (2021).

16 Zhu, Cingiz, and Wesseler (2026).

17 NGFS (2024).

18 TNFD (2025).

19 Agarwala et al. (2026); Lewsey (2022); Uganda, Ministry of Finance (2026).

20 CBD (2022).

21 For more on the rights of nature jurisprudence see Cullinan (2011). On the Whanganui River, see Te Awa Tupua (Whanganui River Claims Settlement) Act 2017.

enous Peoples as rights-holders and decisionmakers not a concession to be granted but one of the most effective ecological strategies available. Momentum is building, too, behind formal recognition of “ecocide” as a prosecutable crime under the Rome Statute—an effort that, whatever its near-term odds in a strained international system, signals how much the standing of nature is shifting in legal imagination.²²

What has not changed

Clear-eyed diagnosis requires acknowledging how far the emerging consensus is from becoming the actual governing logic of our economies and societies.

The current economic system continues to price sovereign debt without accounting for deforestation, to extend commodity finance without accounting for soil loss, and to measure economic growth in ways that record the liquidation of an ancient forest as a positive contribution to GDP. The G20 High-Level Principles on Bioeconomy are voluntary and nonbinding. The financial disclosure frameworks that do exist are largely voluntary. The major credit rating agencies—the gatekeepers of more than \$66 trillion in sovereign debt—still largely ignore the economic consequences of ecological degradation, even as geopolitical events with far less quantifiable impacts are routinely factored into their assessments.²³ The Financing for Development process has not produced the structural reforms to debt architecture, concessional finance, and capital market access that would make ecological investment economically rational for the governments most under pressure to liquidate those resources. Concrete reforms are not hard to name: embedding adaptation investments, natural-capital depletion, and climate exposure directly into the debt sustainability analyses that govern International Monetary Fund and World Bank lending; standardizing climate-resilient debt clauses that pause repayments when a climate shock hits; and scaling debt-for-nature and debt-for-climate conversions from bespoke, one-off deals into a standardized instrument. The Fourth International Conference on Financing for Development in Seville in 2025 pointed toward several of these, but its commitments remain largely voluntary and unmatched by changes in practice that would give them force.

It is worth being clear that financial markets not only suffer from a problem of mispricing, but of political economy. Nature is destroyed not merely because markets fail to capture its value but because powerful actors profit from its destruction—through land concentration, corporate influence, unequal terms of trade, weak tenure, and entrenched illegal economies. Correcting prices is necessary but insufficient wherever the status quo has beneficiaries with every incentive to defend it.

And the politics have gotten even harder in many respects. The multilateral ambition that produced the Addis Ababa Action Agenda, the SDGs, and the Paris Agreement in a single year is not the political environment of 2026. Geopolitical fracture, the return of great-power competition, and the domestic political pressures bearing on international commitments in wealthy countries make coordinated, ambitious action harder to sustain. The countries that most need long-horizon investment in ecological resilience are precisely those facing the most acute short-term borrowing pressures—a structural trap that the current international financial architecture not only fails to resolve but actively deepens.

²² ICC OTP (2025).

²³ Cox (2019).

And beneath the politics lies a harder economic challenge: Shifting production systems away from extractive, nature-destroying models and toward bio-based, circular, and regenerative alternatives almost always requires significant upfront investment—at precisely the moment when inflation, price shocks, and tightening fiscal space have made that kind of long-horizon spending politically toxic in rich and poor countries alike. The transition is necessary, and the costs of not making it are far higher—but the timing could hardly be worse. Compounding all of this, largely unaddressed by the institutions nominally responsible for governing it, is the brute force of environmental crime—illegal deforestation, unregulated and illegal gold mining, wildlife trafficking—which in regions like the Amazon operates at industrial scale, backed by organized crime, untouched by voluntary disclosure frameworks or G20 principles, and entirely indifferent to diplomatic negotiations. It is also increasingly interwoven with other illicit economies—money laundering, arms, and human trafficking—that share its routes, its enablers, and its impunity.

Another force reshaping the development landscape that the SDGs did not anticipate and that the post-2030 agenda cannot afford to ignore is the explosive and largely ungoverned growth of artificial intelligence. AI carries genuine promise for sustainable development—not least for precision agriculture, ecosystem monitoring, early-warning systems, and accelerating the bioeconomy itself. But its physical infrastructure has become one of the fastest-growing sources of environmental pressure on the planet, and this is only set to intensify over the coming years. The impact on electricity demand, water, and e-waste will be significant, and in lower- and middle-income countries, where governance frameworks to assess or constrain environmental impacts are almost entirely absent, the rush to build data centers could disadvantage communities living near these sites, while gains are captured elsewhere.²⁴ At the same time, the concentration of AI's economic gains is compounding exactly the inequalities that the SDGs were designed to address. The AI boom is concentrating economic and political power in a small number of technology companies and states. The post-2030 agenda cannot be credible without directly addressing AI: the concentration of wealth and power it is generating, the land, water, and energy it is consuming at scale, and the question of who governs it, for whose benefit, and under what rules.

There is a further risk worth naming. As nature moves up the agenda of financial institutions and multilateral bodies, it risks being absorbed into the existing paradigm rather than transforming it—becoming another asset class to be priced and traded, rather than recognition that the economy is a subsystem of the biosphere, not the other way around. Carbon markets have shown how this can happen: A good-faith attempt to quantify the cost of emissions becomes, in practice, a mechanism for the continued purchase of the right to emit. Nature markets could follow the same trajectory, with biodiversity credits and ecosystem service payments generating financial flows without ultimately generating ecological recovery. The risk is that, like carbon markets, we attempt to put a price on nature, and then assume the work is done. As David Obura points out in his chapter, the problem is not one of “market failure” but of “values failure.” Without clarity on what we value, the market cannot be expected to accurately assign a price to the externality. Part of that clarity is recognizing that nature holds value in more than one register at once: instrumental value, in the food, water regulation, and coastal protection it provides; relational value, in the identity, stewardship, and reciprocal obligation that bind communities to particular places; and intrinsic value, in living systems whose worth does not depend on human use at all. A price can, at best, approximate the first. It is the second and third that markets tend to erase—and that any honest reckoning with what we owe the living world must keep in view.

24 A report by NatureFinance and NatureAlpha (2025) found that 45% of data centers globally are located in river basins with high water availability risk.

The opportunity ahead: Nature as the foundation of the post-2030 sustainable development agenda

An estimated \$58 trillion of annual global economic output is directly dependent on nature.²⁵ But the deeper point is not economic—it is that the premise that human prosperity can be built in increasing separation from the natural world has been empirically rejected by six decades of development policy experience. Nature is not a sector. It is not a set of services to be priced and traded at the margins. It is the system within which all human activity takes place.

The SDGs started the process of integrating nature and economic development. On many fronts, although most goals are unlikely to be met, there is modest progress compared to the state of economic development in 2015: less poverty and hunger, improved health and education, and a more prosperous and more equal global economy.²⁶ Yet on nature, there is likely to be backsliding in 2030 compared to 2015: The World Wildlife Fund’s 2024 “Living Planet Report” documents a 73% fall in wildlife populations over 50 years; episodes of mass coral bleaching; and threats of tipping points leading to collapse of the Amazon rainforest and the subpolar gyre.²⁷ The World Meteorological Organization’s 2025 “State of the Global Climate” report confirms that the past 11 years have been the hottest on record and that 2025 was 1.43°C warmer than the preindustrial 1850-1900 average.²⁸ It documents the largest-ever imbalance in the Earth’s energy in 2025—the difference between incoming energy from the sun and outgoing energy released by thermal radiation.

These are the basic facts that must be confronted as the 2030 endpoint for the SDGs approaches. There is an opportunity to construct a post-2030 agenda that does not merely consider nature as one or two sectors among many but that properly positions it as the underpinning of all sustainable development.

The chapters in this volume explore how a meaningful post-2030 agenda could be constructed. The purpose is not to provide a blueprint but to start a debate on two fundamental questions that we believe the post-2030 agenda should address: What should we protect and how can we incentivize change and inspire action? The chapter topics are neither exhaustive nor a comment on priorities. Rather, they illustrate the kind of analysis and evidence that should be brought to bear in the debate.

The first part of the volume addresses what we should protect. The analytical frame provided by David Obura, drawing on the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), presents the core concept of nature as the foundation of a sustainable development system. Obura argues that it is essential to understand the key sources of what makes the current system unsustainable—not just the extractive-restorative balances often associated with conservation but also an additional loop of how societies organize the checks and values needed to keep the system in balance. He observes that balance is required at many levels—global, national, and local. At the global level, geopolitical divides complicate a balanced consensus view, but multiple mini-lateral groupings and coalitions of the willing can provide examples of what success can look like.

25 Usher (2026).

26 Kharas, McArthur, and Onyechi (2024).

27 WWF (2024), 7.

28 WMO (2026), 6.

The underlying theme of how to align nature's temporal and spatial domains with economic and social time frames and administrative boundaries is picked up in a chapter by Masahisa Nakamura on watershed management. He argues that most attention in watersheds is given to the flow issues of flood control and water resource development, while not enough attention has been given to the retention systems of lakes, wetlands, and groundwater connections. Together, these determine how water basin systems actually behave. Without a governance and institutional system that adapts and learns, the systems cannot be brought back into balance. Japan's experience with the Law Concerning Special Measures for Conservation of Lake Water Quality to review over time plans for designated lakes of strategic importance is offered as an example of how to improve governance. In a theme that recurs in several chapters, Nakamura cautions that recognition of the issue does not automatically lead to appropriate action and good practice. He calls for strengthened governance, and science-based institutions that use dynamic learning from experience to build understanding of complex system behavior evolving over long periods of time.

Noriaki Sakaguchi uses the example of mangrove ecosystems to explore the difficulties and challenges in implementing nature-based solutions (NbS). Mangroves offer a classic example of extractive approaches to nature. They have been destroyed to establish fish and shrimp ponds that yield short-term economic benefits but at the cost of longer-term benefits. The broad array of mangrove benefits, however (as for many other NbS) cannot readily be quantified—there are no markets providing valuations for coastal protection, local wild fishery resources, carbon sequestration, and biodiversity, in addition to disaster risk resilience. Without such data, technical planning guidelines for NbS are less well-developed than, for example, guidelines for alternatives such as gray infrastructure that have technical specifications for resistance to predicted storm waves and tsunamis. Like other areas, the global conversations on mangroves have recognized the undesirable consequences of mangrove loss and issued calls for protection and conservation, to be achieved by mobilizing significant financial resources from public and private sources. New institutional structures to monitor and share information have been established at the global level (for example, the Mangrove Alliance for Climate and the Mangrove Breakthrough) and national level (Indonesia's initiative on the World Mangrove Center), but financial mobilization has fallen short: As of 2025, less than \$1 billion of the \$4 billion needed by 2030 had been raised.²⁹

David Cotacachi, Fany Kuiru, Tatiana Schor, and Verónica Tejerina offer an alternative perspective on what to protect: the Indigenous Peoples and cultures that have long coexisted with nature. The authors argue that protecting Indigenous Peoples—their territories, governance systems, and cultural values—is essential to safeguarding high-value ecosystems. Drawing on cases from Amazonia, the world's largest tropical forest, they show that Indigenous territories maintain high levels of ecosystem integrity and generate local and global environmental benefits, including hydrological regulation, biodiversity conservation, and climate stability. However, the impact of empowering and engaging Indigenous Peoples at scale falls short of its potential due to the lack of a meaningful compensation framework for Indigenous communities. The chapter highlights the importance of integrating traditional knowledge and Indigenous governance models into global sustainable development agendas, recognizing Indigenous Peoples as strategic partners, rights-holders, and decisionmakers.

The second part of the volume shifts to the question of how to incentivize change using market forces. Arend Ku-lenkampff and Julie McCarthy frame this in terms of addressing a “triple crisis” of debt vulnerability, climate shocks, and ecosystem breakdowns. They point to a core underlying structural problem: in their words, “governments and companies are penalized for vulnerability but not rewarded for active steps to improve resilience.” They draw on

29 See more on the Mangrove Alliance for Climate at <https://mangrovealliance4climate.org/>; see more on the Mangrove Breakthrough at <https://www.mangrovebreakthrough.com/about>; see more on the World Mangrove Center at <https://worldmangrovecenter.org/>; Mangrove Breakthrough (2025) reported more than \$750 million in mangrove-positive investments since 2020.

examples of how countries are now looking to offset such structural disincentives by predetermining key performance indicators of how public investments can decrease risks to nature and then linking the payments on bonds and insurance products to these key performance indicators.

Beyond sovereigns, a number of models of how markets can be used to payment for ecosystems services (PES) are evolving. Technical issues with monitoring, reporting, and verification, along with lack of standardization, mean that many of these models remain one-offs. There are lessons to be learned, however, in institutionalizing finance for nature such that nature-positive outcomes are translated into financial advantage for countries, firms, and communities.

New bioeconomy markets will struggle to scale in remote areas where state presence is limited, tenure is contested, and illicit economies are entrenched. In their chapter, Robert Muggah and Ilona Szabó de Carvalho argue that environmental crime has become a structural constraint on nature-positive development. Land grabbing, illegal logging, illicit mining, wildlife trafficking, illegal fishing, and waste crime generate direct ecological and climate harms, but their effects extend further. Criminal networks use coercion, corruption, and institutional capture to weaken the rule of law, while illicit supply chains undercut compliant producers, erode public revenues, distort commodity markets, and deter the lawful investment on which sustainable bioeconomy markets depend. The chapter also cautions against treating all illegal activity alike, distinguishing organized, enterprise-driven criminality from survival-driven illegality rooted in insecure tenure, weak public services, and the absence of viable livelihoods. Responses must therefore combine targeted deterrence and enforcement with development, financial, and market reforms—stronger public services, land and resource rights, livelihood opportunities, traceability, and financial integrity in frontier communities. As they write, “decisive leverage sits at chokepoints such as mills, traders, ports, and financiers, rather than only at the forest edge ...” Markets for nature cannot succeed unless the institutions governing territory, trade, and finance make legal stewardship more secure and economically attractive than illegal extraction.

The power of market forces—and the current limitations—is illustrated in the chapter by Felipe Faria, Morgan Gillespy, and Guido Schmidt-Traub. They argue that value chains can function as levers of transformation if they align policy, finance, and technology. Using the examples of the soy and cocoa value chains—both with concentrated supply and demand but with different structures—they show how value chains can transmit incentives through procurement, finance, and trade, but that it is public policy that sets the rules of the game.

Faria et al. recommend that financial supervisors require nature-related financial disclosures. The impact of these measures may be complemented and accelerated by trade policy frameworks aimed at reducing deforestation risks in commodity supply chains, including the European Union Deforestation Regulation, although outcomes will depend on how such rules are designed and implemented. They further recommend that systems of rural credit and intra-value chain finance of forward contracts, input prefinancing and barter arrangements, the instruments which comprise the bulk of smallholder finance, be aligned with environmental or social performance.

A common theme in all these chapters is the potential for countries to leapfrog and drive toward green industrialization. This is the theme taken up in the concluding chapter by Monique Atouguia and Dorothy Maseke. The chapter draws on examples of how Brazil integrated its bioeconomy principles into climate change commitments, how China and South Korea have moved forward with AI-enabled biomanufacturing, how Africa is approaching data sovereignty, and how India frames its bio-innovation to accelerate biofuels and biopharma. The examples suggest that technical and institutional governance must be complemented by equity considerations so that both countries with financial and human capital and innovation capacity and those that are rich in raw biodiversity assets can benefit from the bioeconomy. A structurally sound bioeconomy, on this view, must avoid replicating the extractive patterns

of the present economy—both locally, in how Indigenous knowledge is recognized, valued, and fairly remunerated, and internationally, in how the resources, biodiversity, and genetic information of the Global South are used and valued across global supply chains.

If principles of genetic resource sovereignty and benefit-sharing can be coupled with technical innovation, the bioeconomy represents a true leapfrog pathway. The authors conclude, “The choice before policymakers is therefore not whether to pursue a bioeconomy, but how to shape it.” That is the challenge they present for the post-2030 discourse.

Beyond the SDGs: Nature as the foundation

It would be easy, writing at this moment, to mistake difficulty for impossibility. The years immediately ahead may in fact be harder than the ones behind us—the politics more fractured, the fiscal space tighter, the planetary alarm bells louder and more violent.

But the argument this volume makes does not rest on optimism about the next five years, and it is worth being precise about why. The claim that nature is the foundation of development rather than a sector within it is not a hopeful proposition; it is an empirical description of how economies actually work, and every season of failed harvests, washed-out roads, and downgraded sovereign credit makes it more legible, not less. The old paradigm is actively being refuted by events, every day. That is a particularly grim way to land a policy argument—but it is also why this one will not go away.

The shifts described in these pages—the reframing underway in central banks and credit methodologies, the bioeconomy moving from the margins toward the center of national strategy in some of the world’s largest economies, the slow return of legal and economic standing to the communities who have stewarded these systems longest—do not depend on any particular multilateral summit being successful, or a handful of political leaders being sympathetic. They are an alignment of changes being made, often quietly and against the grain of the prevailing politics, by people who understand that the tools a society reaches for in a crisis are the ones already built and waiting when the crisis arrives.

The task of a post-2030 agenda is to ensure that when the failures of the current model become impossible to ignore—and they will—the alternative is not just a set of intuitions, but a working architecture ready to bear the weight of the challenge. The 2030 agenda began the work of moving nature from the margins of how we understand development toward its foundation. That work is now unavoidable, and the cost of deferring it compounds with every year we wait.

The post-2030 agenda that follows could paint a reassuring picture—one in which the public face of progress stays smooth and untroubled while, out of frame, the mounting toll of all that is being lost goes quietly untallied. Or it could show a world meeting the mounting threats to its economies, its societies, and its natural systems with seriousness equal to the gravity of the moment: a world that has moved past quibbling over how to describe its concern and begun building the institutions, the finance, and the rules to prepare for and blunt a defining challenge of our time. Which picture the post-2030 agenda holds up is not yet determined. For now—though the window is narrowing—we are still the ones holding the brush.

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