

Beyond 2030 Agendas: Toward Conditional Convergence in Global Sustainability Governance

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Abstract

As major sustainable-development frameworks approach 2030, “Beyond 2030” conversations are emerging across the UN system. This review synthesizes seven tracks — Sustainable Development Goals (SDGs), Sendai Framework for Disaster Risk Reduction, Kunming-Montreal Global Biodiversity Framework, United Nations Convention to Combat Desertification (UNCCD), Global Goal on Adaptation (GGA) under the Paris Agreement, “Beyond GDP,” and Financing for Development — combining official sources with peer reviewed literature. While the SDGs and Sendai face a hard 2030 expiry with no agreed successor, other frameworks converge on long-term visions to 2050 with recurring review cycles. A cross-framework indicator review confirms this empirically: at least six indicators are identical or near-identical across the CBD/GBF, SDG, GGA, and UNCCD regimes. Eighteen indicators are ranked by relevance, gap severity, connectivity, and tractability for the natural capital and biodiversity research community. The likely trajectory is convergence rather than merger: a shared vision and interoperable indicators, with treaty bodies retaining their mandates.

Keywords: post-2030 agenda; Sustainable Development Goals; Sendai Framework; biodiversity governance; climate adaptation; development finance

Highlights

- No agreed post-2030 framework exists; convergence is conditional, not automatic.
- Six indicators are identical across CBD, SDG, GGA, and UNCCD monitoring regimes.
- A seven-layer coherence stack specifies what convergence actually requires.
- Eighteen priority indicators are ranked for natural capital and biodiversity work.
- Financing quality, not just volume, is the binding constraint across all tracks.

34 **1. Introduction**

35 The international community is approaching 2030 with several global frameworks that share a
 36 target year but have markedly different legal and institutional structures. The 2030 Agenda and
 37 the Sendai Framework are explicitly organized around 2030. By contrast, the Paris Agreement
 38 is an enduring treaty architecture; the Kunming-Montreal Global Biodiversity Framework
 39 combines 2030 targets with a 2050 vision; and the UNCCD is already formally designing a
 40 post-2030 strategic framework.

41 The result is not one single “Beyond 2030” negotiation. Instead, a set of parallel processes is
 42 beginning to converge around a broader question: how should sustainable development,
 43 climate resilience, biodiversity, land, disaster risk, wellbeing, and finance be organized after
 44 2030 without creating another fragmented global reporting system?

45 This review addresses a question broader than “what replaces the SDGs?” The more precise
 46 question is what replaces the 2030 Agenda as a whole — including its disaster-risk,
 47 biodiversity, climate-adaptation, and financing counterparts. I ask whether the multilateral
 48 system can build a common long-term development vision while allowing specialized treaties
 49 and institutions to retain their mandates and adopt interoperable targets, indicators, stocktakes,
 50 and financing arrangements. Section 2 describes my evidence base and screening method.
 51 Section 3 reviews each of the seven tracks in turn, closing with a cross-framework indicator
 52 analysis and a comparative synthesis of findings. Section 4 discusses cross-cutting institutional
 53 themes and their implications. Section 5 concludes.

54 **2. Evidence Base and Methods**

55 **2.1 Primary official sources**

56 This review draws on two complementary evidence streams. The primary stream is official
 57 documentation from the United Nations Secretariat, the Convention on Biological Diversity
 58 Secretariat, the UN Framework Convention on Climate Change Secretariat, the UN Convention
 59 to Combat Desertification Secretariat, and the UN Office for Disaster Risk Reduction,
 60 including summit outcome documents, Conference of the Parties decisions, progress reports,
 61 and press releases.

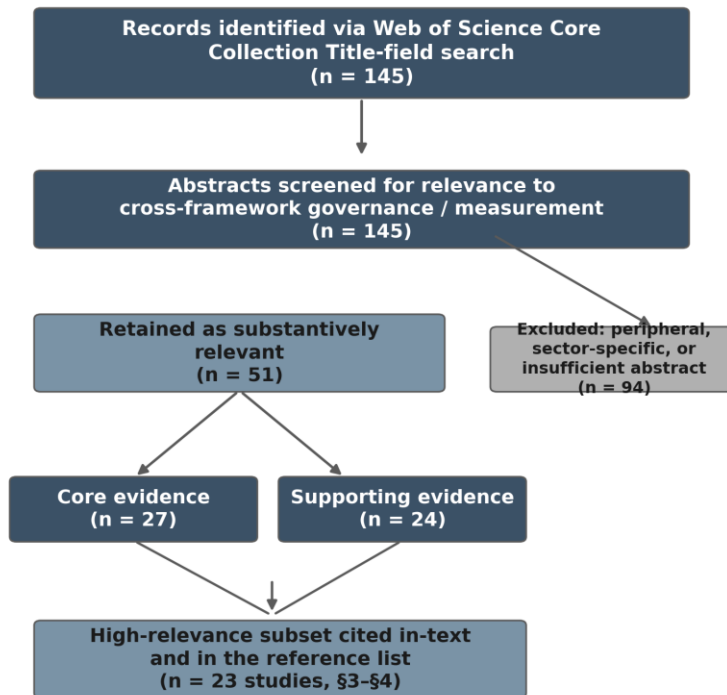
62 **2.2 Peer-reviewed literature: search strategy**

63 The secondary stream is a structured Web of Science Core Collection search (Title field, all
 64 years through August 2026), conducted to test the review's policy mapping against the peer-
 65 reviewed literature. The query combined four Title-field term clusters with Boolean AND
 66 across clusters and OR within each cluster: (1) post-2030/SDG governance terms (e.g., “post-
 67 2030,” “beyond 2030,” “SDG successor,” “2030 Agenda,” *governance*, *framework*,
 68 *indicator*); (2) *sectoral framework terms* (*Sendai*, *disaster risk reduction*, *Global/Kunming-*
 69 *Montreal Biodiversity Framework*, *desertification*, *Paris Agreement*, *Global Goal on*
 70 *Adaptation*, *Belém Adaptation Indicator*, *global stocktake*, *resilience*); (3) measurement and
 71 finance terms (*Beyond GDP*, *wellbeing economy*, *inclusive wealth*, *natural/environmental-*
 72 *economic accounting*, *financing for development*, *international financial architecture*); and (4)
 73 integration vocabulary (*interoperability*, *indicator alignment*, *integration*, *convergence*,
 74 *coherence*, *harmonization*, *equity*). The full verbatim query is reproduced in the Supplementary
 75 Materials for reproducibility. The search returned a 145-record export including bibliographic
 76 metadata, abstracts, and cited-reference counts.

77 **2.3 Screening and evidence synthesis**

78 Every abstract in the 145-record export was read in full (Figure 1). Because the query combined
 79 broad governance vocabulary across four clusters, it also captured sector-specific studies
 80 unrelated to cross-framework governance — e.g., grid-resilience engineering or clinical ethics
 81 — despite matching the search terms. Screening against a single inclusion criterion —
 82 substantive relevance to cross-framework governance, coherence, or measurement of the seven
 83 tracks (§3) — retained 51 records (35%) and excluded 94 (65%) as peripheral. Of the 51, 27
 84 were classified as core evidence and 24 as supporting. All 27 core records underwent full-text
 85 review. Notably, zero records in the full 145-record set used the phrases “post-2030,” “beyond
 86 2030,” “Belém Adaptation Indicators,” “Beyond GDP,” “Sevilla,” or “financing for
 87 development” in title or abstract, indicating this specific policy discourse is too recent to have
 88 an established indexed footprint at the phrase level; the retained literature instead addresses

89 coherence, implementation, measurement, and governance of the underlying frameworks.



90

91 *Figure 1. Evidence screening flow for the Web of Science literature review*

92 3. Review by Institutional Track

93 3.1 The 2030 Agenda and the Sustainable Development Goals

94 Of the 139 SDG targets with sufficient trend data, 15% are on track and 21% show moderate
 95 progress (36% combined); nearly half are advancing only marginally or not at all; and 15%
 96 have slipped below their 2015 baselines (United Nations, 2026a) (Figure 2). An earlier,
 97 advance/unedited version of the Secretary-General's report cited 18% regression; the final
 98 published report and press release confirm 15% (United Nations, 2026b).

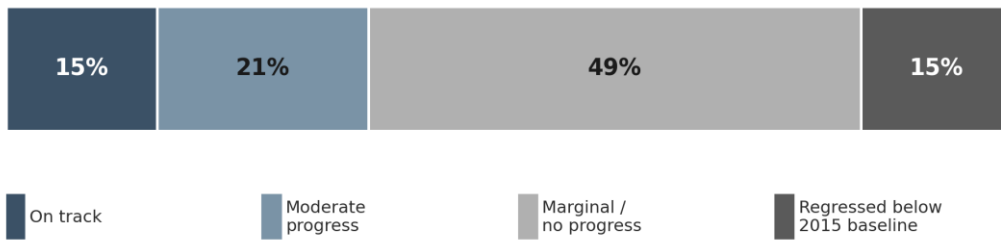


Figure 2. Progress on the 139 assessable SDG targets with sufficient trend data, as of the 2026 reporting cycle. Source: compiled from *The Sustainable Development Goals Report 2026* (United Nations, 2026a).

A genuine institutional asset has been built alongside this shortfall: the international SDG indicator database expanded from roughly 115 indicators and 330,000 records in 2016 to 233 indicators and 3.2 million records in 2026 — evidence favoring reform-and-reuse over wholesale replacement (Sustainability Magazine, 2026). Official development assistance fell by a record 23.1% in 2025, the largest annual decline on record, a headwind cited across nearly every 2026 progress report (United Nations, 2026a).

The formal process is anchored in the Pact for the Future, which invites the SDG Summit in September 2027 to consider “how we will advance sustainable development by 2030 and beyond,” informed by the final quadrennial Global Sustainable Development Report (SDG Knowledge Hub, 2025a). This mandate does not prejudge the outcome: it neither mandates new goals nor decides whether the framework will be extended, revised, or replaced. Stakeholder discussion has floated an extension model (retain the 17 SDGs, revise deadlines), a renewal model (retain structure, replace targets), a core-plus-flexibility model (small global core plus national add-ons), and a long-term-vision model (organize around 2050, borrowing from climate and biodiversity governance) (UN Sustainable Development Knowledge Platform, 2024), though none of these constitutes an agreed position.

Peer-reviewed evidence does not yet favor one successor model; instead, it emphasizes mechanisms for coordinating existing regimes rather than architecture per se. Analyzing nationally determined contributions (NDCs), Janetschek et al. (2020) show that national policy cycles can be used to identify overlaps, gaps, co-benefits, and trade-offs between Paris Agreement commitments and SDG strategies. Hermwille et al. (2023) similarly identify synchronized global review moments — the Global Stocktake and the SDG midterm review — as practical, underused opportunities for integration. This literature shifts attention from

125 goal architecture alone toward recurring alignment and review mechanisms as the primary
126 lever for coherence.

127 **3.2 Sendai Framework for Disaster Risk Reduction (2015–2030)**

128 Sendai's term runs concurrently with the SDGs (2015–2030) and was the first major agreement
129 of the post-2015 development agenda, designed to operate alongside the SDGs, the Paris
130 Agreement, and the Addis Ababa Action Agenda (UNDRR, 2026). Its 2023 midterm review,
131 prepared for UNDRR by the International Science Council, explicitly aimed to support “a post-
132 2030 governance framework” integrating risk reduction as a determinant of sustainable
133 development (International Science Council, 2023).

134 A concrete post-2030 vehicle now exists: UNDRR announced that Qatar will host the Ninth
135 Global Platform for Disaster Risk Reduction (GP2028) in Doha. Convening two years before
136 Sendai's 2030 end date, GP2028 is explicitly billed to “begin shaping the next phase of
137 international cooperation on disaster risk reduction beyond 2030” (UNDRR, 2025a) — a
138 materially more concrete post-2030 signal than currently exists for the SDGs. UNDRR's
139 Strategic Framework 2026–2030 sets four catalytic areas (risk knowledge, locally-led DRR,
140 financing, and recovery readiness) to accelerate implementation in Sendai's closing years
141 (UNDRR, 2025b).

142 Peer-reviewed literature makes the post-Sendai implementation challenge considerably more
143 concrete. Studies spanning global monitoring, Sri Lanka, South Africa, Kenya, and
144 Eswatini/SADC identify a consistent pattern: fragmented plans, weak institutional
145 coordination, uneven subnational implementation, and insufficient monitoring. Alignment
146 between DRR, climate adaptation, and SDG strategies has improved but remains partial, with
147 national plans still needing better sub-national implementation (Yamazaki-Honda, 2022;
148 Yamazaki-Honda, 2024). In Sri Lanka, coherence is limited by weak evidence-to-policy
149 pipelines (Swaris et al., 2024); in South Africa, the three policy domains evolved in institutional
150 isolation with misaligned objectives (Zembe et al., 2023); in Kenya, sub-national multi-level
151 collaboration — not top-down goal alignment — is what actually produces convergence
152 (Smucker et al., 2020). A 2026 theoretical review of Eswatini/SADC argues Policy Coherence
153 for Development can enhance resilience through joint accountability and more efficient
154 resource allocation (Myeni et al., 2026), while South Asian evidence finds ecosystem-based
155 DRR requires science-policy integration mechanisms most national frameworks currently lack
156 (Meraj et al., 2026). Separately, a lack of interoperability between data, models,

communication, and governance — not a shortage of individual tools — is identified as the central barrier to integrated disaster risk management (Schröter et al., 2025). Common threads across this literature — shared metrics, joint M&E, multilevel institutions, aligned budgets, and place-based implementation — suggest a post-Sendai framework should invest as much in implementation architecture as in new targets.

3.3 Convention on Biological Diversity / Kunming-Montreal Global Biodiversity Framework

Adopted at COP15 (December, 2022), the GBF sets four long-term goals for 2050 and 23 action-oriented targets for 2030 — meaning biodiversity governance already has an agreed beyond-2030 destination (UN Biodiversity Lab, 2026). COP16 (Cali, October–November 2024) adopted the Cali Fund for digital sequence information benefit-sharing but was suspended for loss of quorum before resolving resource-mobilization decisions (Earth Negotiations Bulletin, IISD 2025); the Rome resumed session (February, 2025) adopted the first-ever text on Planning, Monitoring, Reporting and Review mechanisms, including a schedule for a global review at COP17 (Carbon Brief, 2025).

By the 28 February 2026 deadline, 125 countries — nearly two-thirds of the 196 CBD Parties — submitted their 7th National Reports, the primary data source for COP17's first global review; several megadiverse countries (Brazil, the Democratic Republic of the Congo, South Africa, Papua New Guinea) were notable non-submitters as of that deadline (Convention on Biological Diversity, 2026). COP17 (Yerevan, Armenia, 19–30 October 2026) conducts the first global review of collective GBF progress (UNDP, 2026).

The biodiversity literature adds an important caution: ambitious global targets do not automatically translate into mainstreamed sectoral policy. The 2010 Biodiversity Target strengthened international cooperation but did not create policy alignment or coherent national implementation across Latin America and the Caribbean (Velázquez Gomar, 2014), and a systematic review of Biodiversity Policy Integration across 43 empirical studies similarly finds overall integration levels remain low — targets are overly abstract, biodiversity policies are often uncoded add-ons, and resources are insufficient (Runhaar et al., 2024). Comparing the United States and European Union, national mainstreaming of GBF targets is hampered by weak linkages to binding policy mechanisms, a pattern that predates the GBF and afflicted its Aichi Target predecessor (Carroll et al., 2022). Joint planning, coherent incentives, adaptive learning, stronger accountability, and institutional change emerge across this literature as

central conditions for closing the target-to-implementation gap. Equity matters as much as mainstreaming: a “Rights for Life” scenario shows centering Indigenous Peoples' and local communities' rights can outperform area-based approaches like Half-Earth on social-equity grounds (Sarkki et al., 2023), while an earlier analysis of the post-2015 development agenda shows biodiversity and ecosystem services can be structurally integrated into a broader goal set when target areas and means of implementation are explicit from the outset — a design lesson directly relevant to any post-2030 architecture (Lucas et al., 2014). On the inter-treaty side, a 2025 analysis proposes concrete mechanisms for the Ramsar Convention and CBD to build cooperation and indicator interoperability around GBF implementation (Ramsar–CBD Interoperability 2025).

199 **3.4 UNFCCC Global Goal on Adaptation and the Belém Adaptation** 200 **Indicators**

The Paris Agreement itself does not expire in 2030; Article 7 establishes the Global Goal on Adaptation (GGA) as a continuing objective. The UAE Framework for Global Climate Resilience (COP28) set 11 targets — four on the iterative adaptation cycle, seven thematic — several with 2030 milestones (IISD, 2024). At CMA7/COP30 (Belém 2025), Parties adopted 59 Belém Adaptation Indicators feeding into the Global Stocktake, and launched the two-year Belém–Addis Vision on Adaptation (UNFCCC, 2026). Indicator development explicitly borrowed design from other frameworks: among proposed indicators compiled from party submissions, those drawn from the SDGs, Sendai, and the GBF were the most commonly cited (UNFCCC, 2024). A technical paper on indicator use and aggregation is due by 30 September 2026; a formal review of the indicators is scheduled after the second Global Stocktake in 2029 (UNFCCC, 2025).

Peer-reviewed adaptation literature adds two design requirements the official-source evidence does not surface on its own: equity and scale. Barkai and Winkler (2025) address a gap in the GGA architecture directly: while fair-share frameworks exist for mitigation-responsibility equity, no equivalent previously existed for the GGA, so they propose a rubric-based Adaptation Equity Framework spanning distributive, procedural, recognitional, and intergenerational justice. Scale matters as much as framing: aggregate, city-level adaptation indicators can conceal severe neighborhood-level inequities (Kim et al., 2026), and practice-based monitoring and evaluation work shows that who defines indicators and controls resulting data can either reproduce or reduce inequity (Kotschy et al., 2025). This literature implies the

GGA's national-flexibility principle should be paired with, not substituted for, explicit disaggregation, participation, and equity criteria. Separately, Hermwille et al. (2023) argue the global stocktake and SDG midterm review are complementary moments governments should deliberately link — an academic case for the stocktake-convergence pattern identified in Section 4.

3.5 UNCCD: The Most Advanced Formal Post-2030 Design Process

The UNCCD is structurally distinct: it is the only track among the “2030-bound” frameworks with an already-launched, time-bound intergovernmental process explicitly mandated to design a post-2030 successor. Following COP16, Parties established an Intergovernmental Working Group on the Future Strategic Framework (three regional representatives plus five technical experts) tasked with identifying key elements of a post-2030 strategic framework and re-analyzing existing indicators for post-2030 relevance (CARI Association, 2025). COP17 (Ulaanbaatar, Mongolia, 17–28 August 2026) — the first of three major environmental COPs in 2026 — has the Working Group's final report before it; as of this review's preparation date the session remained in progress (UNCCD, 2026a; UNCCD, 2026b).

The chronic implementation challenge this process seeks to resolve is well documented: a 2011 study in Land Degradation & Development found the Convention's implementation record “remains poor worldwide,” attributing this to weak environmental policy integration across multi-level governance contexts — a diagnosis frequently still cited as relevant (Briassoulis, 2011). On measurement, a 2022 paper proposes integrated environmental-economic accounting for land degradation as a more complete alternative to the sparse indicators currently used for UNCCD monitoring, directly relevant to both the Working Group's mandate and the wider Beyond GDP/natural-capital agenda (§3.6) (Carlucci et al., 2022).

3.6 Beyond GDP: A New Intergovernmental Measurement Agenda

The Beyond GDP agenda moved from academic debate into a formal UN process in 2026. The Secretary-General's independent High-Level Expert Group (HLEG) on Beyond GDP — 14 experts appointed in May 2025, co-chaired by Kaushik Basu and Nora Lustig — released *Counting What Counts: A Compass of Progress for People and Planet* on 7 May 2026 (United Nations, 2026c). The report proposes a dashboard of 31 indicators organized around equitable, inclusive, and sustainable wellbeing; approximately half are drawn directly from existing SDG indicators, allowing immediate reporting from data countries already collect (UNCTAD,

252 2026). The HLEG was created in direct response to a Member State request in the Pact for the
 253 Future; Spain and Guyana were appointed co-facilitators of the follow-on intergovernmental
 254 process in April 2026.

255 The academic evidence supports plural measurement rather than a single GDP substitute.
 256 Beyond GDP's core alternative concept, inclusive wealth, has an extensive prior research base:
 257 a bibliometric analysis of 1,444 Web of Science papers by Kousar et al. (2025) traces sustained
 258 growth in inclusive-wealth and natural-capital/biodiversity-accounting research well before the
 259 HLEG's 2026 proposal — evidence that the HLEG report consolidates an already-maturing
 260 research agenda rather than originating one. Land-accounting approaches show a practical
 261 route for connecting environmental condition to income and wealth effects rather than
 262 reporting them separately (Carlucci et al., 2022). The reviewed literature does not reveal a
 263 settled scholarly consensus on any single headline post-GDP metric; Beyond GDP is therefore
 264 better treated as a complementary measurement layer than as a GDP replacement (§4.3).

265 **3.7 Financing for Development**

266 The Fourth International Conference on Financing for Development (FfD4, Sevilla, 30 June–
 267 3 July 2025) adopted the Compromiso de Sevilla, recognizing an estimated US\$4 trillion
 268 annual financing-for-development gap and launching a package of reforms (SDG Knowledge
 269 Hub, 2025b). It is the first intergovernmentally agreed financing-for-development framework
 270 since the 2015 Addis Ababa Action Agenda (United Nations, 2025a), and covers domestic
 271 public resources, private finance mobilization, debt sustainability, international financial
 272 architecture reform, and trade, with a companion “Sevilla Platform for Action” comprising
 273 over 130 implementation initiatives (United Nations, 2025b) (Figure 3). Notably, the United
 274 States withdrew from the negotiations and did not attend the Sevilla conference, underscoring
 275 a broader fault line in global consensus around sustainable-development financing (UN News,
 276 2025). This track is not a separate silo: virtually every “what is constraining progress”
 277 discussion in the SDG, Sendai, and GBF literature reviewed above points to the same shortfall
 278 — the 2025 ODA collapse landing squarely inside the gap Sevilla was designed to address.

(a) Official development assistance

(b) Financing-for-development gap



Figure 3. (a) The 2025 decline in Official Development Assistance and (b) the estimated annual financing-for-development gap recognized at FfD4.

Peer-reviewed adaptation-finance evidence adds a distributional caution the official-source record does not surface: green finance is not automatically equitable. Examining debt-financed urban sanitation adaptation, Hyde-Smith et al. (2025) find that green-labeled financing can shift costs onto users and future generations, and that a “green halo” label does not inherently make financing cheaper or distribute risk more fairly. A future means-of-implementation architecture should therefore track not only aggregate finance volumes, but also concessionality, affordability, lifecycle liabilities, the incidence of costs and benefits, and intergenerational equity.

3.8 Comparative Synthesis

Table 1 summarizes the beyond-2030 status of each track as of August 2026; Figures 4 and 5 present complementary visual syntheses of institutional time horizons and milestone sequencing, respectively.

Table 1. Comparative state of play across the seven tracks (August, 2026).

Framework	What “2030” means	Beyond-2030 status (Aug., 2026)	Status
2030 Agenda / SDGs	Current global target year	Pact mandates consideration in Sept. 2027; no successor agreed	Formal gateway
Sendai Framework	Framework formally ends 2030	GP2028 (Doha) explicitly billed to begin shaping post-2030 DRR cooperation	Active
CBD / KMGBF	23 targets reach 2030; 4 goals reach 2050	Long-term direction already agreed; first global review at COP17 (Oct., 2026)	Active
Paris Agreement / GGA	Treaty continues; several adaptation targets use 2030 milestones	59 Belém Adaptation Indicators adopted 2025; methodological work underway	Active

Framework	What “2030” means	Beyond-2030 status (Aug., 2026)	Status
UNCCD	Current Strategic Framework ends 2030	Formal Working Group drafted post-2030 elements; COP17 decision pending	Formal process
Beyond GDP	No 2030 expiry	31-indicator dashboard proposal now in UN-led intergovernmental process	Active
Financing for Development	Supports implementation before/after 2030	Sevilla Commitment (2025) provides renewed financing framework and reform agenda	Formal

295

296 *Table 2. Key dates to track 2026–2030.*

Date	Event	Track
17–28 Aug 2026	UNCCD COP17, Ulaanbaatar — post-2030 strategic framework decision expected	UNCCD
30 Sep 2026	UNFCCC technical paper on Belém Adaptation Indicators use/aggregation due	GGA
19–30 Oct 2026	CBD COP17, Yerevan, Armenia — first global review of GBF	CBD/GBF
Nov 2026	CMA8/COP31	GGA/UNFCCC
2027	Final quadrennial GSDR published	SDGs
Sep 2027	SDG Summit/HLPF — official post-2030 agenda talks begin	SDGs
2028	Ninth Global Platform for Disaster Risk Reduction, Doha, Qatar	Sendai/DRR
2029	Second global stocktake concludes; Belém Adaptation Indicator review follows	GGA
2030	SDG, Sendai, and UNCCD (2018–2030) terms end; CBD COP19 — second GBF review	All tracks

297

298 Figure 4 visualizes the same seven tracks along a continuous timeline, making explicit which
 299 frameworks face a hard 2030 boundary versus which already extend to 2050 or remain open-
 300 ended. Figure 5 sequences these same milestones chronologically to highlight the density of
 301 decision points concentrated in the 2026–2027 window.

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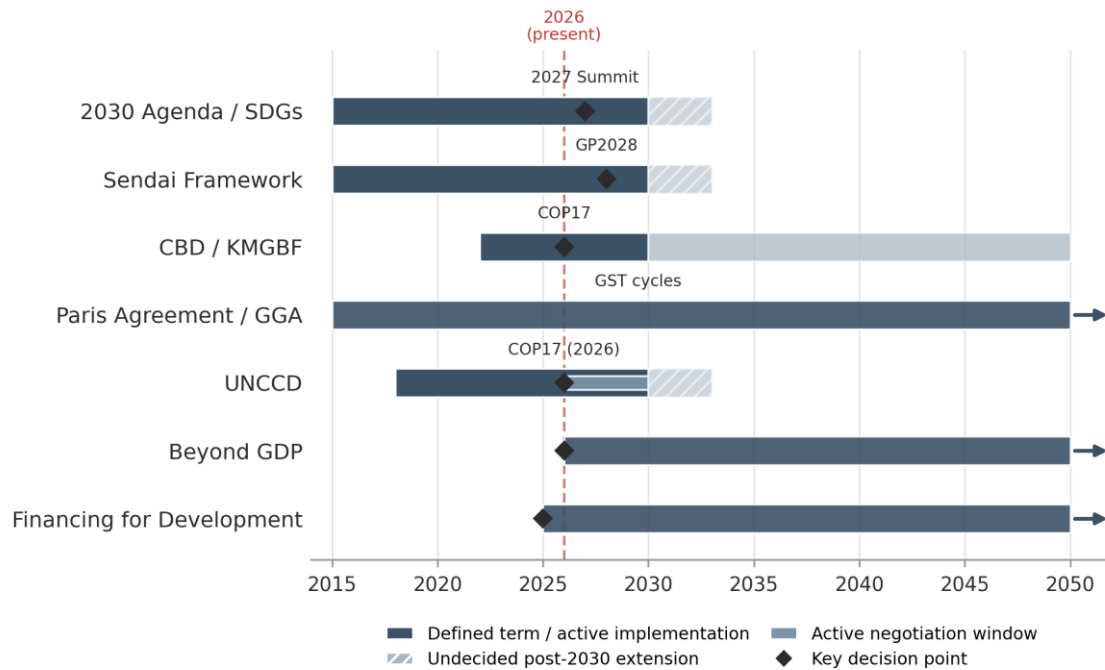


Figure 4. Institutional time horizons across the seven Beyond-2030 tracks 2015–2050. Diamonds mark key decision points; hatched segments indicate an undecided post-2030 extension.

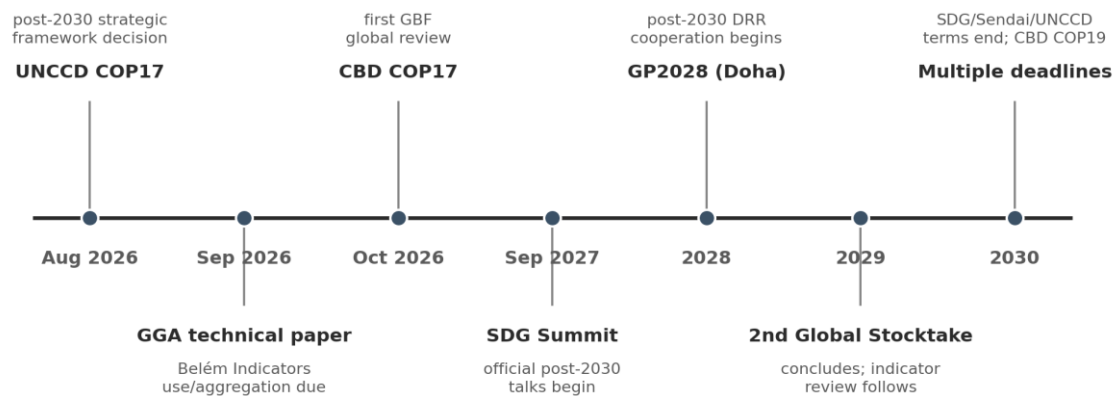


Figure 5. Sequence of critical Beyond-2030 milestones, August 2026 to 2030.

3.9 Cross-Framework Indicator Analysis

The convergence patterns identified across Sections 3.1–3.7 can be tested directly at the indicator level. I reviewed the full indicator sets of the four measurement regimes most relevant to natural capital, ecosystem services, and biodiversity: the CBD/GBF monitoring framework (53 headline and binary indicators spanning Goals A–D and Targets 1–23) (UNEP-WCMC, 2026); the 94 environment-relevant indicators within the 267-indicator SDG global indicator framework, concentrated in Goals 2, 6, 11, 12, 13, 14, and 15 (United Nations Statistics

315 Division, 2026); the 59 Belém Adaptation Indicators adopted under the GGA, in particular the
 316 six sub-indicators under Target 9(d) on ecosystems and biodiversity (UNFCCC, 2025); and the
 317 38 Sendai Framework indicators, concentrated in Global Targets A–G (UNDRR, 2026).
 318 Section 4.3 discusses the implications of these findings for the natural capital, ecosystem
 319 services, and biodiversity research community.

320 **3.9.1 Indicator-Level Evidence: Where the Frameworks Already Overlap**

321 This side-by-side review finds that indicator interoperability across these regimes is already
 322 partially realized, often without formal cross-referencing between secretariats. At least six
 323 indicator pairs are identical or near-identical: the Red List Index (CBD A.3 / SDG 15.5.1); land
 324 degradation (SDG 15.3.1, doubling as UNCCD's Land Degradation Neutrality metric and
 325 mapping to CBD Target 1); protected-area coverage (CBD 3.1 / SDG 14.5.1, 15.4.1); fish-
 326 stock sustainability (CBD 5.1 / SDG 14.4.1); coastal eutrophication (CBD 7.1 / SDG 14.1.1);
 327 and biodiversity finance (CBD D.1 / SDG 15.a.1, 15.b.1, sharing the same OECD DAC Rio-
 328 marker methodology) (CBD Secretariat & OECD DAC 2026). This is a substantive finding,
 329 not a coincidence of drafting: a single, well-resourced data effort in any of these six areas could
 330 satisfy reporting obligations under two or three regimes at once — exactly the “operational
 331 interoperability” the literature in Section 4.2 argues is still missing in practice.

332 The CBD D.1 indicator on international biodiversity finance illustrates both the opportunity
 333 and the difficulty precisely. Its own metadata documentation acknowledges that the underlying
 334 OECD DAC Rio-marker methodology has no agreed coefficient for converting “significant”
 335 (as opposed to “principal”) biodiversity objective scores into comparable finance figures — by
 336 convention many countries apply 40%, but this is described in the metadata itself as common
 337 practice rather than an agreed standard — and that multilateral institutions report
 338 inconsistently, creating double-counting risk between bilateral and multilateral channels (CBD
 339 Secretariat & OECD DAC 2026). These are precisely the kinds of methodological
 340 standardization problems the natural capital and environmental-economic accounting research
 341 community is positioned to help resolve, given its existing engagement with the UN System of
 342 Environmental-Economic Accounting.

343 The newly adopted Belém Adaptation Indicators under GGA Target 9(d) are a second concrete
 344 entry point. Because they were only adopted in November 2025, all six sub-indicators —
 345 covering ecosystem service provision, ecosystem area under adaptation management,
 346 ecosystem resilience, threat status of ecosystems, threat status of species, and adaptive capacity

347 from ecosystem-based adaptation and nature-based solutions — currently have no established
 348 baseline or reporting infrastructure (UNFCCC, 2025). This is a rare instance of a live
 349 international indicator being built from a genuinely blank slate, and the ecosystem-based
 350 adaptation and nature-based solutions research community has an unusually open window to
 351 shape its operationalization before national reporting practices harden.

352 By contrast, the Sendai Framework's 38 indicators are structured almost entirely around
 353 disaster loss and international cooperation (Global Targets A–G) rather than ecosystem
 354 condition; ecosystem-based disaster risk reduction and green infrastructure are acknowledged
 355 only as optional disaggregation categories within the metadata for critical-infrastructure loss
 356 indicators (C.5, D.4, D.8), not as standalone metrics (UNDRR, 2026). This is itself a finding
 357 relevant to Section 4.2's mainstreaming argument: even where ecosystem-based approaches
 358 are explicitly recognized as legitimate DRR tools, as in the midterm review evidence reviewed
 359 in Section 3.2, they remain absent from the framework's own headline measurement
 360 architecture — a gap the natural capital and ecosystem-services community could help close
 361 ahead of any post-2030 Sendai successor process.

362 **3.9.2 Priority Indicators for Natural Capital, Ecosystem Services, and** 363 **Biodiversity Community Engagement**

364 I ranked 18 indicators drawn from the CBD/GBF, SDG, GGA, and Sendai monitoring
 365 frameworks by their relevance and tractability for contribution from the natural capital,
 366 ecosystem services, and biodiversity research community. Each indicator was scored on four
 367 criteria, 0–3 each (maximum total 12): Relevance (R) — how directly the indicator measures
 368 biodiversity, ecosystem condition, or natural capital stocks/flows; Gap severity (G) — how
 369 significant the current data, methodological, or reporting gap is; Cross-framework connectivity
 370 (X) — how many of the four frameworks reviewed share this indicator or a near-identical
 371 counterpart (0 = single framework; 3 = shared across three or more); and Tractability (T) —
 372 how actionable near-term engagement is given existing research infrastructure and methods.
 373 The full 18-indicator table, including individual scores and recommended community roles, is
 374 provided as Supplementary Table S1; the analysis below synthesizes its main patterns.

375 Three findings stand out. First, the six top-ranked indicators (score = 10 of 12) share a common
 376 profile: the ecosystem services headline indicator (CBD B.1), ecosystem/forest extent (CBD
 377 A.2 / SDG 15.1.1), the Red List Index (CBD A.3 / SDG 15.5.1), international biodiversity
 378 finance (CBD D.1 / SDG 15.a.1, 15.b.1), the newly adopted GGA ecosystem-based adaptation

indicators (Target 9(d)), and land degradation (SDG 15.3.1 / UNCCD). None of these six is a niche or narrowly technical metric; each sits at the structural core of at least two international regimes simultaneously, which is precisely why a single, well-resourced measurement effort in any one of these six areas could satisfy reporting obligations under two or three regimes at once rather than only one.

Second, the recommended community roles are not evenly distributed across contribution types. Data gathering appears as a recommended role for roughly half of the 18 indicators, more than any other category, followed by modeling and reporting/synthesis; methods development appears only once (natural capital accounting tools, SDG 12.b.1). This distribution suggests that for most of the highest-priority indicators, the binding constraint is not a lack of conceptual or methodological frameworks — those largely already exist — but a lack of sustained data infrastructure and field measurement capacity, particularly in the Global South, where much of the underlying ecological and socioeconomic data collection remains chronically underfunded relative to reporting obligations.

Third, cross-framework connectivity is not uniform across indicator types. State-of-nature indicators — land degradation, protected-area coverage, and the Red List Index — achieve the highest connectivity scores (shared across three or more regimes), consistent with the six confirmed cross-framework overlaps identified in Section 3.9.1. By contrast, finance- and disclosure-oriented indicators (CBD D.1 biodiversity finance, CBD 15.1 corporate disclosure) score highly on relevance and gap severity but somewhat lower on connectivity, indicating that financial-flow and corporate-reporting metrics remain comparatively siloed within their originating regime even where the underlying policy problem — inadequate and poorly tracked biodiversity finance — is shared across all four frameworks reviewed. The two lowest-ranked indicators in the table (CBD 21.1 on biodiversity monitoring information, and the Sendai Target F finance-cooperation indicators) are themselves meta-indicators about data and finance infrastructure; their comparatively low composite scores reflect lower direct biodiversity/ecosystem relevance and tractability under the scoring rubric, even though they may function as prerequisites for progress on several of the higher-ranked indicators above them.

4. Discussion: Institutional Convergence and Cross-Cutting Themes

4.1 The Institutional Backdrop: Pact for the Future and UN80

The Pact for the Future (adopted 22 September 2024) is a 64-page outcome document with 56 commitments spanning sustainable development and financing, peace and security, science and technology cooperation, and global governance reform, designed to “turbocharge” SDG implementation (SDG Knowledge Hub 2025c; United Nations, 2026). It is the legal and political trigger for the 2027 SDG Summit's consideration of the post-2030 agenda and also directly mandated the Beyond GDP HLEG process (§3.6), making it the connective document across nearly every track reviewed here. The parallel UN80 Initiative, an efficiency and reform effort now in a “decisive phase,” recorded a 21% reduction in Secretariat staff positions in 2026 and adoption of new mandate-discipline rules (United Nations, 2026d).

4.2 Cross-Cutting Themes

Synthesizing the evidence in Sections 3.1–3.9, I organize the cross-cutting findings into a seven-layer “coherence stack” that clarifies what convergence actually requires, moving beyond the observation that global goals overlap: (i) a shared long-term vision toward wellbeing, resilience, and ecological integrity, ideally extending beyond 2030; (ii) synchronized policy and review cycles — deliberately linking national planning, NDC/NAP updates, voluntary national reviews, and global stocktakes rather than scheduling them independently; (iii) institutional and legal coherence — clear mandates and cross-ministerial, horizontal-vertical accountability; (iv) operational data interoperability — shared concepts, metadata, provenance, and workflows, not merely identically named indicators; (v) financial coherence — budgets and instruments aligned with stated objectives, with finance-quality metrics tracked alongside volumes; (vi) place-based implementation — translation into subnational plans and land-use decisions; and (vii) equity, rights, and learning safeguards — disaggregation, participation, and Indigenous/local rights built into monitoring design from the outset. The evidence below is strongest for layers (ii), (iv), and (vii), and thinnest for (iii).

- ***Financing is the central, recurring constraint.*** The 2025 ODA collapse, the US\$4 trillion Sevilla financing gap, and repeated references to unmet financing commitments across SDG, Sendai, and GBF reporting make finance the dominant constraint identified across tracks (United Nations, 2026a; SDG Knowledge Hub, 2025b).

- 440 – ***Long-term vision combined with recurring review cycles is an emerging design***
441 ***template.*** The GBF's 2030-targets-within-2050-goals structure, the Paris Agreement's
442 recurring Global Stocktake, and UNCCD's proposed post-2030 process all point toward
443 combining a longer horizon with periodic review rather than a single fixed end date (UN
444 Sustainable Development Knowledge Platform, 2024). Peer-reviewed literature supports
445 this pattern directly: Hermwille et al. (2023) make an explicit academic case for linking
446 the stocktake and SDG midterm review, and periodic-review mechanisms recur as a
447 proposed solution across the DRR coherence literature (§3.2).
- 448 – ***Indicator interoperability is deliberate and explicit, but the literature shows it must be***
449 ***operational, not rhetorical.*** GGA indicator submissions drew most heavily on SDG,
450 Sendai, and GBF indicators (UNFCCC, 2024); Beyond GDP's dashboard draws roughly
451 half its indicators directly from the SDGs (UNCTAD, 2026); UNCCD's Working Group
452 is re-analyzing existing indicators for post-2030 relevance (CARI Association, 2025).
453 Section 3.9 documents at least six indicators that are already identical or near-identical
454 across two or more of these regimes. Schröter et al. (2025) identify the same structural
455 barrier from the practitioner side, arguing interoperability requires common metadata,
456 provenance, and workflows, not just shared labels; the Bari Manifesto's ten principles for
457 essential biodiversity variables offer one concrete template for what this looks like in
458 practice. Harmonized core metrics improve comparability, but Conostas et al. (2022) and
459 Balali et al. (2026) both show resilience indicators specifically must also become more
460 dynamic, uncertainty-aware, and cross-scale to avoid missing interconnected shocks.
- 461 – ***Targets are not self-executing.*** Biodiversity and resilience studies consistently show that
462 target-setting increases visibility and cooperation without automatically producing
463 sectoral mainstreaming, implementation coherence, or adequate resourcing (Velázquez
464 Gomar, 2014). Post-2030 design therefore needs explicit institutional, budgetary, and
465 accountability mechanisms alongside any new targets (Runhaar et al., 2024).
- 466 – ***Equity is part of measurement architecture, not an afterthought.*** Adaptation, resilience,
467 and biodiversity research converge on the same conclusion: distributional, procedural,
468 recognition, and intergenerational justice, spatial disaggregation, participatory M&E,
469 and Indigenous/local rights need to be built into monitoring and financing systems from
470 the start rather than added after indicators are already selected (Barkai and Winkler,
471 2025; Kotschy et al., 2025; Sarkki et al., 2023).

- ***UNCCD functions as a pathfinder for negotiated transition.*** Its sequence — review, evaluate indicators, convene a time-bound working group, draft, and negotiate before expiry — is the most concrete transition template available as of August 2026.
- ***Reform of process is proceeding alongside reform of substance.*** UN80 and Pact for the Future governance reforms are intended to support, not precede, the various post-2030 goal-setting conversations.
- ***Political consensus is not universal.*** The United States' withdrawal from the FfD4/Sevilla negotiations (UN News, 2025), combined with broader reporting that a small number of countries have moved into active opposition to the sustainable-development paradigm, is a live fault line likely to shape the ambition of any post-2030 framework.

Taken together, the peer-reviewed evidence strengthens this review's convergence thesis but adds an important qualification: convergence is not a self-executing consequence of overlapping goals. It has to be engineered through institutions, policy cycles, financing, data infrastructure, accountability, and equity safeguards — the same conditions the coherence, mainstreaming, and equity literature above identifies as necessary but frequently missing.

4.3 Implications for Natural Capital, Ecosystem Services, and Biodiversity Communities

The convergence pattern documented above has specific, and largely favorable, implications for researchers and practitioners working on natural capital accounting, ecosystem services, and biodiversity science — but the same evidence base also contains explicit warnings against complacency.

First, natural capital accounting is emerging as a plausible interoperability layer connecting several tracks that would otherwise report separately. Beyond GDP's HLEG dashboard draws roughly half its indicators directly from existing SDG data (UNCTAD, 2026), and the underlying inclusive-wealth research programme — which treats natural, produced, and human capital as jointly measured stocks — substantially predates and now underpins that dashboard (Kousar et al., 2025). In parallel, UNCCD land-degradation monitoring is moving toward integrated environmental-economic accounting that expresses ecological change alongside income and wealth effects rather than in a separate reporting silo (Carlucci et al., 2022). Read together, these two developments suggest natural capital accounting could become the

connective tissue linking Beyond GDP, UNCCD, and CBD/GBF monitoring — provided the three processes actively cross-reference rather than duplicate one another's indicator work, a coordination step that is not yet institutionally guaranteed.

Second, the biodiversity-mainstreaming literature is a direct warning to this community against assuming ambitious targets are self-executing. The GBF's four 2050 goals and 23 2030 targets already give biodiversity governance an agreed beyond-2030 destination (§3.3) — but Velázquez Gomar (2014) shows the 2010 Biodiversity Target strengthened cooperation without producing coherent national implementation, and a 43-study systematic review (Runhaar et al., 2024) finds the same pattern still holds for GBF-era mainstreaming: targets remain abstract, biodiversity policies are often uncoded add-ons, and resources are insufficient. For the natural capital and ecosystem-services community specifically, this implies that producing better accounts or better valuations is necessary but not sufficient; those accounts need an explicit institutional and budgetary pathway into sectoral decision-making (agriculture, energy, infrastructure, trade) to avoid becoming another abstract reporting exercise alongside the target itself.

Third, equity is now treated in the literature as intrinsic to biodiversity and ecosystem-services measurement, not a separate social safeguard bolted on afterward. The “Rights for Life” scenario (Sarkki et al., 2023) shows that centering Indigenous Peoples' and local communities' rights can outperform conventional area-based conservation scenarios on social-equity grounds, and Kotschy et al. (2025) show that who defines an indicator and who controls the resulting data materially shapes whether monitoring reduces or reproduces inequity. For ecosystem-services valuation and natural capital accounting work feeding into GBF, UNCCD, or Beyond GDP reporting, this means participatory design and data governance are measurement-quality issues, not only ethical ones.

Fourth, the financing evidence has a direct consequence for biodiversity finance specifically. The finding that green-labeled adaptation finance does not automatically distribute costs and benefits fairly (Hyde-Smith et al., 2025) applies with equal force to biodiversity and nature-based finance instruments (biodiversity credits, debt-for-nature swaps, GBF Fund disbursements): volume of finance mobilized is an incomplete success metric without also tracking concessionality, who bears lifecycle costs, and whether Indigenous and local communities share in benefits rather than only bearing implementation burdens.

For the natural capital, ecosystem services, and biodiversity research communities, the practical implication is threefold: (i) invest in making natural capital accounts interoperable with SDG, UNCCD, and Beyond GDP indicator systems now, while those systems are still being designed, rather than after they are fixed; (ii) treat mainstreaming into sectoral budgets and decisions as part of the research and advocacy agenda, not a downstream implementation detail for governments alone; and (iii) build equity and participatory data governance into ecosystem-service and natural-capital indicator design from the outset, following the same logic the adaptation-equity literature has already established for the GGA. Section 3.9 presents the indicator-level evidence and priority-ranking analysis underlying these implications.

5. Conclusion

As of August 2026, no negotiated “Beyond 2030 agenda” exists. What exists instead is a rapidly developing landscape of formal mandates, treaty-specific transition processes, indicator reforms, and stakeholder proposals across seven institutional tracks. Three conclusions follow. First, tracks differ structurally in their exposure to a 2030 cliff-edge: the SDGs and Sendai face a hard expiry with no agreed successor, while the GBF and Paris Agreement already have long-term horizons and are mid-cycle rather than at a term boundary; UNCCD occupies an intermediate position with an active transition process underway. Second, the full-text evidence refines rather than overturns the central claim: the likely trajectory is conditional convergence rather than merger. The major regimes share broad objectives and increasingly reuse indicators, but overlap does not reliably produce coherent implementation on its own (§4.2) — convergence must be engineered through the seven-layer coherence stack (synchronized review cycles, institutional and legal mandates, operational data interoperability, financial coherence, place-based implementation, and equity and rights safeguards, oriented around a shared long-term vision). Third, financing — crystallized in the 2025 ODA collapse and the US\$4 trillion Sevilla gap — is the constraint most consistently limiting ambition across every track, and finance quality and distribution matter as much as volume (§3.7).

A plausible post-2030 architecture, consistent with the evidence reviewed, would combine a durable long-term vision with a compact common indicator core, treaty-specific modules, nationally and locally contextualized measures, periodic methodological review, and explicit equity and rights safeguards. This is a synthesis inference from the literature rather than a negotiated institutional blueprint; it preserves the autonomy of specialized agreements while

565 identifying conditions under which national systems could reduce duplication and turn global
566 commitments into more coordinated action.

567 This review has three principal limitations. First, it is a narrative synthesis of a fast-moving
568 policy landscape rather than a systematic review of a mature literature; the UNCCD and CBD
569 COP17 outcomes discussed were still pending at the time of writing and should be
570 independently verified. Second, the accompanying literature screening (§2) returned a low
571 precision rate ($\approx 35\%$) from a broad Boolean query, reflecting how new this policy discourse is
572 in the indexed literature. Third, the literature is considerably stronger on coherence and
573 implementation of existing frameworks than on explicit post-2030 design, and remains
574 geographically uneven; the Belém Adaptation Indicators were adopted too recently to evaluate,
575 so the GGA conclusions (§3.4) should be read as design implications rather than empirical
576 findings. I recommend this review be revisited after the September 2027 SDG Summit, once
577 the UNCCD and CBD COP17 outcomes are finalized.

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593

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773 **S. Supplementary Materials**

774 **S.1 Full Web of Science Search Query**

775 Cluster 1 (post-2030/SDG governance): “post-2030” OR “post 2030” OR “beyond 2030” OR
 776 “2030 and beyond” OR post-SDG(wildcard) OR “future sustainable development agenda” OR
 777 “SDG successor(wildcard)” OR “future of the SDG(wildcard)” OR “sustainable development”
 778 OR SDG(wildcard) OR “2030 Agenda” OR governance OR framework(wildcard) OR
 779 target(wildcard) OR indicator(wildcard) OR monitoring OR implementation OR finance OR
 780 “global governance”. Cluster 2 (sectoral frameworks): “Sendai Framework” OR “disaster risk
 781 reduction” OR “post-Sendai” OR “Global Biodiversity Framework” OR “Kunming-Montreal
 782 Global Biodiversity Framework” OR biodiversity OR desertification OR “land degradation”
 783 OR “Paris Agreement” OR “Global Goal on Adaptation” OR GGA OR “Belém Adaptation
 784 Indicator(wildcard)” OR “climate adaptation” OR “global stocktake” OR resilience. Cluster 3
 785 (measurement and finance): “Beyond GDP” OR “wellbeing economy” OR “inclusive wealth”
 786 OR “natural capital accounting” OR “environmental economic accounting” OR “financing for
 787 development” OR “SDG financing” OR “international financial architecture” OR “means of
 788 implementation”. Cluster 4 (integration vocabulary): interoperability OR “indicator
 789 interoperability” OR “indicator alignment” OR integration OR convergence OR coherence OR
 790 harmonization OR harmonisation OR equity. Clusters were combined with Boolean AND;
 791 terms within each cluster were combined with OR. “(wildcard)” denotes the asterisk wildcard-
 792 truncation operator in the original query (e.g., framework(wildcard) matches framework,
 793 frameworks, and frameworked). Searched against the Web of Science Core Collection, Title
 794 field, all years through August 2026.

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Table S1. Priority indicators for natural capital, ecosystem services, and biodiversity community contribution, ranked by composite score (R+G+X+T, max 12). Full scoring detail underlying the synthesis in Section 3.9.2.

Indicator	Frameworks	R	G	X	T	Total	Role
CBD B.1 (Ecosystem services)	CBD-GBF Goal B; GGA 9(d)(a)	3	3	2	2	10	Modeling, synthesis
CBD A.2 / SDG 15.1.1 (Ecosystem/forest extent)	CBD-GBF A/T1; SDG 15.1.1	3	2	2	3	10	Data gathering, modeling
CBD A.3 / SDG 15.5.1 (Red List Index)	CBD-GBF A/T4; SDG 15.5.1 (identical)	3	2	3	2	10	Data gathering
CBD D.1 / SDG 15.a.1, 15.b.1 (Biodiversity finance)	CBD-GBF D/T19; SDG 15.a.1, 15.b.1	2	3	3	2	10	Reporting, synthesis
GGA Target 9(d)(a–f) (Ecosystem-based adaptation)	GGA/UNFCCC; CBD Goal A/B	3	3	2	2	10	Modeling, data gathering
SDG 15.3.1 (Land degradation)	SDG; UNCCD (LDN); CBD T1	3	2	3	2	10	Data gathering, modeling
CBD A.1 (Red List of Ecosystems)	CBD-GBF A/T1	3	3	1	2	9	Data gathering, modeling
SDG 12.b.1 (Natural capital accounting tools)	SDG; CBD Goal D; Beyond GDP	3	3	1	2	9	Methods development
CBD 3.1 / SDG 14.5.1, 15.4.1 (Protected area coverage)	CBD-GBF T3; SDG 14.5.1, 15.4.1	2	1	3	3	9	Data gathering
CBD 15.1 (Corporate biodiversity disclosure)	CBD-GBF T15; TNFD-adjacent	2	3	1	2	8	Reporting, synthesis
SDG 6.6.1 (Water-related ecosystem extent)	SDG; CBD T1	3	2	1	2	8	Data gathering
SDG 14.1.1 / CBD 7.1 (Coastal eutrophication)	SDG 14.1.1; CBD-GBF T7	2	2	2	2	8	Modeling, data gathering
SDG 14.4.1 / CBD 5.1 (Fish stocks)	SDG 14.4.1; CBD-GBF T5	2	2	2	2	8	Modeling
SDG 2.4.1 / CBD 10.1 (Sustainable agriculture area)	SDG 2.4.1; CBD-GBF T10	2	2	2	2	8	Data gathering, country support
SDG 11.7.1 / CBD 12.1 (Urban green/blue space)	SDG 11.7.1; CBD-GBF T12	2	1	2	2	7	Data gathering, country support
CBD 18.2 (Harmful subsidies value)	CBD-GBF T18	2	3	1	1	7	Modeling
Sendai Target F (F1–F8, DRR finance)	Sendai; parallels CBD D.1–D.3	1	2	2	1	6	Reporting, synthesis
CBD 21.1 (Biodiversity monitoring information)	CBD-GBF T21 (data infra.)	1	3	1	1	6	Reporting, synthesis

Note: Each indicator was scored on four criteria, 0–3 each (maximum total 12):

- **Relevance (R)** how directly the indicator measures biodiversity, ecosystem condition, or natural capital stocks/flows;
- **Gap severity (G)** how significant the current data, methodological, or reporting gap is;
- **Cross-framework connectivity (X)** how many of the four frameworks reviewed share this indicator or a near-identical counterpart
- **Tractability (T)** how actionable near-term engagement is given existing research infrastructure and methods.