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Integrating biodiversity and human capital considerations into sustainability reporting

Note by the UNCTAD secretariat

Summary

In recent years, the main focus of global deliberations on sustainability reporting has been climate-related financial disclosures. Biodiversity and human capital-related disclosures are emerging as topics for further standardization on a global basis. In this context, several global and regional standard setters have finalized work and others have initiated consideration of these issues for standardization.

This note is aimed at facilitating the deliberations of delegates on these developments and on assessing the need for regulatory measures and the institutional and human capacities required for the effective implementation of emerging disclosure requirements and recommendations. A high-level review of current and emerging disclosure requirements and standards on biodiversity and human capital considerations is followed by a comparison of the disclosure requirements and standards for these two topics. Finally, policymaking considerations and practical implementation aspects, including taking into account the economic realities and the needs of developing countries, are addressed.



I. Introduction

1. Member States have long recognized the essential role of the private sector in achieving economic and social development. As cross-border trade and investment gained momentum, the need for reliable and globally comparable financial and non-financial disclosures on the performance of enterprises became evident. The Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting was established in 1982 and has since served as an inclusive forum for the consideration of financial, environmental, social and corporate governance-related issues; it has provided extensive support to member States in implementing globally recognized frameworks, standards, codes, guidelines and good practices, with a view to facilitating the preparation of high-quality financial and non-financial reports and attracting international and domestic investment. The Group has conducted extensive research, facilitated consensus-building at a global level and conducted work on the ground to assist member States. The Group has achieved global consensus on a variety of topics, often in a pioneering manner, and has issued guidance materials, to assist member States in addressing emerging issues related to strengthening or building regulatory, institutional and human capacities.

2. Following the adoption of the Sustainable Development Goals, the Intergovernmental Working Group of Experts began to address fragmented sustainability reporting frameworks and standards and to facilitate harmonization. UNCTAD and the United Nations Environment Programme are co-custodians of indicator 12.6.1 (number of companies publishing sustainability reports) under the Goals. The Group held consultations with, among others, the main bodies that issued frameworks and standards on sustainability reporting; these consultations informed a series of dedicated sessions and provided impetus for issuing guidance on the preparation and publication of sustainability reports based on 33 quantitative core indicators addressing the performance of reporting entities with regard to economic, environmental, social and institutional aspects. A revised version of *Guidance on Core Indicators for Sustainability and Sustainable Development Goal Impact Reporting* was issued in 2022. Some of the core indicators include topics on biodiversity and human capital, such as B.6.1, land use adjacent to biodiversity sensitive areas; C.1, gender equality; C.2, human capital; C.3, employee health and safety; and C.4, coverage by collective agreements.

3. The Intergovernmental Working Group of Experts provides input to globally recognized standard setters dealing with sustainability reporting matters. In 2022, the Group provided inputs, including with regard to the concerns and realities of developing countries, to the International Sustainability Standards Board on two exposure drafts, of International Financial Reporting Standard S1 (general requirements for the disclosure of sustainability-related financial information); and International Financial Reporting Standard S2 (climate-related disclosures). In 2023, the Group provided inputs on a request for information on agenda priorities. Based on feedback, the Board is conducting research on biodiversity and human capital-related disclosures.¹ In February 2025, the Group provided feedback to the International Public Sector Accounting Standards Board on the exposure draft of sustainability reporting standard 1, issued in 2024.

4. This note is aimed at facilitating the deliberations of delegates on integrating biodiversity and human capital considerations into sustainability reporting. A high-level review of current and emerging disclosure requirements and standards on such considerations is followed by a comparison of the disclosure requirements and standards for these two topics. Finally, policymaking considerations and practical implementation aspects, including taking into account the economic realities and the needs of developing countries, are addressed. The key biodiversity-related requirements and standards addressed in the note include those of the following: Sustainable Development Goals and related indicators; Kunming-Montreal Global Biodiversity Framework; International Sustainability Standards Board and related boards operating under the International Financial Reporting Standards Foundation; European Sustainability Reporting Standards of the European Union

¹ See <https://www.ifrs.org/news-and-events/news/2024/04/issb-commence-research-projects-risks-opportunities-nature-human-capital/>.

European Financial Reporting Advisory Group (EFRAG); Global Reporting Initiative; and Task Force on Nature-Related Financial Disclosures. The key human capital-related requirements and standards addressed in the note include those of the following: Sustainable Development Goals and related indicators; International Accounting Standards Board and International Sustainability Standards Board; European Sustainability Reporting Standards and Global Reporting Initiative.

5. In addition, a note on sustainability reporting standards and initiatives recently established by international and regional standard setters has been prepared, to facilitate deliberations at the present session of the Intergovernmental Working Group of Experts, including related standards on ethics, assurance and accountancy education; the approaches in various countries to establishing sustainability reporting requirements; and key challenges faced by countries in implementation efforts, identifying measures to address them.²

II. Biodiversity: Global goals and disclosure requirements and standards

6. Biodiversity refers to the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.³ Biodiversity and healthy ecosystems underpin the stability of natural systems that businesses rely on for resources, supply chains and operational continuity. Ecosystem services, the benefits humans derive from nature such as clean water, pollination and climate regulation, are critical in long-term business sustainability. Companies that do not address biodiversity risks may face regulatory penalties, supply chain disruptions and reputational damage; companies that integrate ecosystem considerations can unlock new opportunities for innovation, cost savings and competitive advantages.

A. Global goals

7. The United Nations has noted the need for biodiversity conservation for over half a century. Significant consensus on this topic includes the Declaration of the United Nations Conference on the Human Environment (Stockholm, 1972), a commitment reinforced in the Report of the World Commission on Environment and Development (Brundtland Report, 1987) and at the United Nations Conference on Environment and Development (Rio de Janeiro, Brazil, 1992). The 2030 Agenda for Sustainable Development provides a comprehensive framework for global sustainable development. Biodiversity is a cross-cutting theme in many of the Sustainable Development Goals, serving to recognize the critical role of ecosystem stability in food security and climate resilience. Several Goals include targets and indicators on monitoring progress in biodiversity conservation and sustainable use. Goal 2 links agricultural biodiversity to food security; Goal 6 includes the tracking of freshwater ecosystem health; Goal 12 includes the reduction of biodiversity pressures from resource exploitation; Goal 13 indirectly supports biodiversity through climate resilience; Goal 14 includes indicators on ecosystem-based management and marine protected areas; and Goal 15 addresses terrestrial and freshwater biodiversity, monitoring forest cover and species survival. Under indicator 12.6.1, disclosures on biodiversity impacts are included in the advanced-level metadata requirements. In 2022, under the Convention on Biological Diversity, the Kunming-Montreal Global Biodiversity Framework was issued, setting targets for achievement by 2030, including on corporate accountability for biodiversity risks. These frameworks serve to illustrate the role of the United Nations in fostering global consensus and private-sector engagement on these key sustainability issues.

² TD/B/C.II/ISAR/113.

³ See <https://www.cbd.int/convention/text>.

B. Disclosure requirements and standards

1. International Sustainability Standards Board

8. In 2021, the International Financial Reporting Standards Foundation announced the decision to establish the International Sustainability Standards Board, to develop a comprehensive global baseline of sustainability disclosure standards. The Foundation houses both the International Accounting Standards Board and the International Sustainability Standards Board and has consolidated the Climate Disclosure Standards Board and the Value Reporting Foundation, which includes the Sustainability Accounting Standards Board and the International Integrated Reporting Council. The mandate of the International Sustainability Standards Board is to create standards that provide investors with consistent, comparable and decision-useful sustainability information. In 2023, the Board issued the two foundational sustainability reporting standards, S1 and S2.

9. The Sustainability Accounting Standards Board standards provide industry-specific disclosure requirements for reporting financially material sustainability information. The Board integrates biodiversity and ecosystem considerations into industry-specific standards where these factors might materially impact financial performance. The framework provides guidance on structured disclosures (including basic concepts, principles, definitions and objectives) across natural resource-dependent sectors such as agricultural products, forestry management and metals and mining, as follows: entities engaged in processing agricultural products are required to disclose the share of agricultural products sourced from regions with high or extremely high baseline water stress; entities engaged in forestry management are required to disclose areas of forestland in endangered species habitat; and with regard to metals and mining, key metrics include the share of proved and probable reserves in or near sites with a protected conservation status or endangered species habitat.

10. The Climate Disclosure Standards Board framework provides a coherent approach for companies in disclosing environmental and climate-related information in mainstream financial reports. The guidance on water-related disclosures assists with reporting on risks, dependencies and impacts in line with financial reporting, covering water scarcity, quality, regulatory risks and operational dependencies, and encouraging disclosures related to governance, strategy, risk management and metrics; it is aligned with frameworks such as that of the Task Force on Climate-related Financial Disclosures. The guidance on biodiversity-related disclosures assists with reporting on risks and dependencies, drawing attention to ecosystem degradation, species loss and regulatory changes.⁴

2. European Union Sustainability Reporting Standards

11. European Sustainability Reporting Standard E4 on biodiversity and ecosystems represents a comprehensive mandatory biodiversity-related disclosure framework for entities operating in the European Union.⁵ Adopted in July 2023 as part of the corporate sustainability reporting directive, the European Sustainability Reporting Standards, including E4, were formulated to be applicable to over 50,000 companies, mandating the disclosure of biodiversity impacts, risks and dependencies beginning from fiscal year 2024. E4 is aligned with the targets in the Kunming-Montreal Global Biodiversity Framework; incorporates the nature restoration goals of the European Union, creating a regulatory bridge between global commitments and corporate accountability; and applies the double materiality approach, mandating reporting on how business activities affect ecosystems (impact materiality) and how biodiversity loss creates financial risks (financial materiality), as defined in European Sustainability Reporting Standard S1 on general requirements. This dual approach helps ensure that companies address both environmental footprints and business resilience, with disclosure requirements spanning direct operations, upstream suppliers and downstream value chains. E4 requires transparency about biodiversity

⁴ See <https://www.cdsb.net/what-we-do/reporting-frameworks/environmental-information-natural-capital>, <https://www.cdsb.net/what-we-do/nature-related-financial-disclosures/water-related-disclosures> and <https://www.cdsb.net/biodiversity>.

⁵ See https://eur-lex.europa.eu/eli/reg_del/2023/2772/oj.

dependencies and impacts across the entire value chain. Companies are required to conduct location-specific assessments for all operational sites affecting protected or key biodiversity areas, with sector-specific requirements; for example, agribusinesses must report on farmland conversion impacts and soil degradation risks. E4 requires the disclosure of dependencies on ecosystem services, such as water purification or crop pollination, linking corporate value creation to natural capital. For financial institutions, E4 mandates portfolio-level assessments of biodiversity-related risks, adding more rigour to how banks and investors evaluate asset-level exposures. In transition plans, companies are required to demonstrate how they will achieve no net loss of biodiversity for new projects and net gain commitments for existing operations by 2030, aligning with Biodiversity Strategy for 2030 of the European Union.

3. Global Reporting Initiative

12. The Initiative, established in 1997, has evolved into a widely adopted sustainability reporting framework, providing comprehensive guidelines on environmental, social and governance-related impacts. The modular standards system includes universal standards establishing foundational reporting principles, organizational disclosures and materiality assessment requirements; and topical standards. Among the latter, standard 101 on biodiversity, updated in 2024, represents a significant advancement, aligning with the targets of the Kunming-Montreal Global Biodiversity Framework.⁶ The update addresses urgent global biodiversity challenges through a science-based approach that is universally applicable and has a particular significance for high-impact sectors such as agriculture, consumer goods and mining; and introduces disclosure requirements for comprehensive value chain assessments, requiring companies to evaluate biodiversity impacts across the entire product life cycle, from raw material sourcing through production to end-of-life disposal. Development of the updated standard involved multi-stakeholder consultations, incorporating scientific methodologies from the Science Based Targets Initiative.

4. Task Force on Nature-Related Financial Disclosures

13. The Task Force, launched in 2021, represents another initiative to create a global framework for entities, to identify, assess and disclose nature-related dependencies, impacts, risks and opportunities. Modelled after the Task Force on Climate-Related Financial Disclosures framework, the Task Force on Nature-Related Financial Disclosures framework, issued in 2023, introduces several nature-specific disclosure recommendations, including additional guidance such as the locate-evaluate-assess-prepare methodology, which provides a systematic approach for companies in identifying, assessing, managing and, where appropriate, disclosing nature-related dependencies, impacts, risks and opportunities.⁷ The 14 recommendations cover the four disclosure areas of governance, metrics and targets, risk and impact management and strategy, providing a comprehensive view of a company's relationship with nature.⁸ The Task Force recommends location-based disclosures, encouraging companies to identify operations and material issues in or near sensitive ecosystems and assess impacts on threatened species and habitats, among other aspects. This geographical specificity enables more accurate risk assessment and targeted conservation efforts. The Task Force aligns with major global goals and standards, including the Kunming-Montreal Global Biodiversity Framework and the International Sustainability Standards Board, facilitating compatibility with emerging regulatory requirements, and the Task Force framework provides sector-specific guidance for high-impact industries such as agriculture, mining and consumer goods, recognizing biodiversity-related challenges and opportunities.⁹

⁶ See <https://www.globalreporting.org/how-to-use-the-gri-standards/gri-standards-english-language/>.

⁷ See <https://tnfd.global/publication/additional-guidance-on-assessment-of-nature-related-issues-the-leap-approach/>.

⁸ See <https://tnfd.global/publication/recommendations-of-the-taskforce-on-nature-related-financial-disclosures/>.

⁹ See https://tnfd.global/tnfd-publications/?_sft_framework-categories=additional-guidance-by-sector#search-filter.

C. Comparability of biodiversity-related disclosure requirements and standards

14. Over the past two decades, biodiversity reporting has evolved significantly, with key frameworks requiring detailed disclosures of ecological impacts (see annex I). The European Sustainability Reporting Standards mandate comprehensive biodiversity-related disclosures under the corporate sustainability reporting directive. The Global Reporting Initiative updated standard 101, expanding the focus on ecosystem impacts and value chain accountability; it adopts a multi-stakeholder perspective, reflecting broader regulatory and societal expectations. The Task Force on Nature-Related Financial Disclosures complements these frameworks by integrating nature-related risk assessments; it adopts a flexible approach recognizing the different needs or requirements of report preparers.

15. International Financial Reporting Standard S1 requires entities to disclose sustainability-related risks, including biodiversity dependencies, if they affect financial performance. International Financial Reporting Standard S2 focuses on the climate but indirectly addresses biodiversity through ecosystem degradation risks; for example, deforestation impacting asset valuations. The International Sustainability Standards Board approach contrasts with that in Global Reporting Initiative standard 101, which requires disclosures when the impact is material to stakeholders and on ecosystem impacts; the Board metrics instead prioritize operational risks relevant to investors. Standard 101 requires entities to disclose impacts across all tiers of the value chain and the recommendations of the Task Force on Nature-Related Financial Disclosures require the same.

16. European Sustainability Reporting Standard E4 requires detailed biodiversity-related disclosures, including on habitat fragmentation and species endangerment. Unlike the International Sustainability Standards Board standards and metrics, the European Sustainability Reporting Standards adopt double materiality, requiring disclosures of both financial risks and sustainability impacts. For example, companies are required to disclose mitigation efforts for protected areas and align with Biodiversity Strategy for 2030. Although focused on impacts, Global Reporting Initiative standard 101 is aligned with the rigour of the European Sustainability Reporting Standards, requiring site-level biodiversity assessments and restoration targets.¹⁰ Regulatory backing indicates that such double materiality disclosures are likely to become more common among firms operating in the European Union. The Task Force on Nature-Related Financial Disclosures issued a correspondence-mapping with the European Sustainability Reporting Standards, signalling the achievement of a high level of consistency.¹¹

17. Global Reporting Initiative standard 101 expands biodiversity reporting requirements, introducing new disclosures on ecosystem services (101-8) and supply-chain due diligence and emphasizing impacts on nature, requiring firms to report on habitat destruction and species extinction risks, as well as the management of biodiversity-related risks and impacts. For example, disclosures 101-4 and 101-5 refer to disclosures of quantitative data on land conversion. The Task Force on Nature-Related Financial Disclosures recommendations and metrics align with Global Reporting Initiative environmental standards, and the locate-evaluate-assess-prepare methodology is referred to in standard 101, particularly with regard to location-specific assessments.¹²

18. The Task Force on Nature-Related Financial Disclosures framework helps firms identify, assess and manage nature-related dependencies, impacts, risks and opportunities through the locate-evaluate-assess-prepare methodology. It is aligned with Global Reporting Initiative environmental standards, recommending site-level disclosures (general recommendation 3) and is consistent with the European Sustainability Reporting Standards

¹⁰ See <https://www.globalreporting.org/media/qzmoeixv/esrs-gri-interoperability-index-november-2024.pdf>.

¹¹ See <https://tnfd.global/publication/tnfd-esrs-correspondence-mapping/#publication-content>.

¹² See <https://tnfd.global/publication/interoperability-mapping-between-the-gri-standards-and-the-tnfd-recommended-disclosures-and-metrics/>.

environmental standards beyond E1 (climate change). However, reporting under both the Global Reporting Initiative and the Task Force is voluntary. The European Sustainability Reporting Standards have regulatory backing for application across the European Union.

19. The International Sustainability Standards Board approach prioritizes financial materiality; the European Sustainability Reporting Standards and standard 101 emphasize ecological accountability focused on impacts. The Task Force on Nature-Related Financial Disclosures has a flexible approach to materiality (general requirement 1). Standard 101 sets the bar higher, with value chain disclosures and ecosystem service metrics. Future convergence may take place through further collaboration.¹³

III. Human capital: Global goals and disclosure requirements and standards

20. Effective human capital management and disclosure are vital in order for businesses to maintain competitiveness, ensure regulatory compliance and build stakeholder trust. A skilled and engaged workforce drives innovation and productivity, making talent management a strategic priority. Transparent reporting on workforce diversity, training, turnover and well-being helps investors assess a company's long-term viability and culture, aligning with increasing sustainability disclosure expectations. Strong human capital practices enhance employee retention, reduce legal and reputational risks and strengthen brand reputation among consumers who value ethical labour practices.

A. Global goals

21. Investments in people's health, education and economic opportunities are fundamental to sustainable development and the 2030 Agenda for Sustainable Development provides a comprehensive framework for human capital development. Human capital, encompassing the knowledge, skills and health of populations, serves as the foundation for achieving the Sustainable Development Goals. Human capital is a cross-cutting theme in many of the Goals, with indicators designed to measure progress in education, health, gender equality and decent work under, for example, Goals 3, 4, 5 and 8. Under indicator 12.6.1, disclosures on human capital are included in the advanced-level metadata requirements (companies meet the indicator if they publish sustainability information covering the minimum requirements).¹⁴ The Special Representative of the Secretary-General on the issue of human rights and transnational corporations and other business enterprises issued Guiding principles on business and human rights: Implementing the United Nations "protect, respect and remedy" framework, endorsed by the Human Rights Council in 2011.¹⁵

B. Disclosure requirements and standards

1. International Sustainability Standards Board

22. International Financial Reporting Standard S1 details general sustainability reporting requirements and indirectly requires entities to disclose material sustainability-related risks and opportunities tied to human capital, emphasizing workforce factors that could influence financial performance. S1 also integrates with S2 where human capital intersects with climate adaptation, such as in retraining for green jobs. For example, "an entity could explain how environmental risks affect its reputation or ability to operate, and how

¹³ See <https://www.theaccountant-online.com/news/ifrs-foundation-and-tfnd-collaborate/>.

¹⁴ See <https://www.ohchr.org/en/publications/reference-publications/guiding-principles-business-and-human-rights>.

¹⁵ A/HRC/17/2.

developing new products to respond to those risks affects the workforce composition or financial performance reported in the entity's financial statements".¹⁶

23. Sustainability Accounting Standards Board human capital metrics emphasize quantitative, comparable data, such as injury rates in extractives and minerals processing and minimum wage in services. By focusing on measurable outcomes rather than general principles, the standards facilitate consistent benchmarking across companies. They provide industry guidance for reporting financially material human capital-related information, focusing on workforce factors that impact business performance. Key disclosure topics related to employees include labour practices, health and safety, diversity and inclusion and compensation, with metrics tailored to each sector, such as supply chain labour disclosures for consumer goods and diversity and inclusion disclosures for financials. This approach enables companies to disclose the most relevant workforce risks and opportunities for their industry, helping investors assess operational resilience and long-term value creation. However, challenges remain with regard to data collection, particularly for global firms navigating varying labour regulations and reporting systems.

2. European Union Sustainability Reporting Standards

24. The European Sustainability Reporting Standards mandate comprehensive human capital-related disclosures under the corporate sustainability reporting directive, emphasizing workforce-related impacts, risks and opportunities. As an initial step, the reporting entity performs a double materiality assessment at the topic, subtopic and metrics levels. If the reporting thresholds are met, European Sustainability Reporting Standard S1 requires detailed reporting on working conditions, diversity, equal opportunities and health and safety. Entities must disclose quantitative metrics such as gender pay gaps, injury rates and training hours, along with qualitative explanations of policies and due diligence processes. The requirements are aligned with the broader social sustainability goals of the European Union, ensuring transparency in workforce management and fostering accountability. The standards are also integrated with the themes of other European Sustainability Reporting Standards, such as on business conduct (G1) and value chain impacts (S2), providing a holistic view of human capital risks across operations and supply chains. S1 and S2 also require disclosures on labour and human rights, including freedom of association, collective bargaining, child labour and forced labour. The European Sustainability Reporting Standards human capital-related disclosures emphasize double materiality, requiring companies to report on both financial materiality (how workforce issues affect the business) and impact materiality (how the business affects workers). For example, European Sustainability Reporting Standard S1 mandates disclosures on precarious employment, collective bargaining coverage and measures to prevent forced labour. Sector-specific standards are envisaged, to introduce additional requirements, such as heightened safety reporting for high-risk industries.¹⁷ The standards require forward-looking analysis, including on workforce planning and adaptation to demographic changes. The requirements enhance transparency yet pose challenges for companies with regard to data collection, particularly for multinational firms addressing varying national labour laws. The European Sustainability Reporting Standards framework represents significant progress in human capital-related reporting legislative regulation, going beyond traditional environmental, social and governance-related metrics, to include worker voice and social dialogue.

3. Global Reporting Initiative

25. The Initiative provides comprehensive frameworks for human capital-related disclosures through the 400 series standards, as follows: 401-1 on employment, along with 2 on general disclosures and sectoral standards, require entities to report on employment

¹⁶ International Financial Reporting Standards Foundation, 2023, Basis for conclusions on general requirements for disclosure of sustainability-related financial information, available at <https://www.ifrs.org/content/dam/ifrs/publications/amendments/english/2023/issb-2023-c-basis-for-conclusions-on-ifrs-s1-general-requirements-for-disclosure-of-sustainability-related-financial-information-part-c.pdf?bypass=on>.

¹⁷ See <https://www.efrag.org/en/sustainability-reporting/esrs-workstreams/sectorspecific-esrs>.

types, turnover rates and benefits; 402 on labour and management relations; and 2 and 407 cover collective bargaining agreements and worker consultation processes. The standards are being revised and aligned with International Labour Organization standards. Global Reporting Initiative guidelines emphasize quantitative metrics such as employee demographics, training hours per employee (404-1) and health and safety statistics, including injury rates (403-2). This approach enables entities to demonstrate commitment to fair labour practices while providing stakeholders with comparable workforce data across industries and regions. The requirements help entities to identify and mitigate human capital risks throughout value chains. The modular structure of the framework allows entities to identify material topics while maintaining reporting consistency in standardized disclosures.

C. Comparability of human capital-related disclosure requirements and standards

26. Human capital-related reporting has become a critical component of corporate sustainability disclosures, with major frameworks adopting distinct approaches (annex II). International Financial Reporting Standards S1 and S2 focus on financially material sustainability issues and, indirectly, human capital risks, such as workforce stability and skills gaps. In contrast, the Sustainability Accounting Standards Board provides industry-specific metrics, particularly for labour-intensive sectors. The European Sustainability Reporting Standards mandate disclosures on working conditions, diversity and employee rights. The Global Reporting Initiative encompasses broader stakeholder impacts, including fair wages and health and safety. The frameworks vary in scope, with the International Financial Reporting Standards prioritizing investor needs through financial materiality considerations, and the Global Reporting Initiative and the European Sustainability Reporting Standards adopting multi-stakeholder perspectives.

27. International Financial Reporting Standard S1 requires companies to disclose sustainability-related risks linked to human capital if they affect financial performance, such as labour shortages and turnover rates. S2 is climate-focused yet indirectly addresses human capital through just transition risks; for example, the reskilling of workers in carbon-intensive industries. Sustainability Accounting Standards Board standards tailor human capital-related disclosures to sector-specific risks; for example, the standards on consumer goods require reporting on supply chain labour practices and those on extractives and minerals processing focus on employee safety and worker participation in collective agreements. The metrics prioritize investor-relevant data, such as productivity and retention rates, in contrast to the Global Reporting Initiative material topics-based disclosure requirements.

28. European Sustainability Reporting Standard S1 mandates detailed reporting on working conditions, diversity and training. It adopts the double materiality approach, requiring firms to disclose both financial risks and societal impacts, in contrast to the single-materiality approach of International Financial Reporting Standard S1 or the Sustainability Accounting Standards Board metrics. For example, companies must report on gender pay gaps and collective bargaining coverage. These requirements align with Global Reporting Initiative 405 on diversity and equal opportunity. The corporate sustainability reporting directive regulatory backing of the disclosure requirements is indicative that such disclosures will be more prevalent among firms operating in the European Union, compared with other regions.

IV. Considerations for policymaking and practical implementation

29. The work that standard setters have undertaken in recent years to establish disclosure standards and requirements on biodiversity and human capital aspects can bear fruit when these are applied and regulated consistently on a global basis. Most of the standards addressed in this note are relatively new and have yet to be implemented.

Standard setters have noted that the standards are interoperable. Yet implementing countries, particularly developing countries, may face significant challenges in effectively embedding emerging standards and recommendations into regulatory systems. The European Commission is considering simplifying the application of the European Sustainability Reporting Standards.¹⁸ There are some technical challenges; for example, at present, there is no protocol for biodiversity-related disclosures equivalent to that for greenhouse gas emissions. Therefore, good implementation practices have yet to emerge.

A. Biodiversity

30. Developing countries may face unique challenges in adopting global biodiversity reporting standards, including limited institutional and human capacities, data scarcity and competing development priorities.

31. International Financial Reporting Standards S1 and S2 (including Sustainability Accounting Standards Board metrics), the European Sustainability Reporting Standards, Global Reporting Initiative standard 101 and the Task Force on Nature-Related Financial Disclosures each present different compliance burdens and opportunities. The frameworks aim to standardize disclosures, yet the focus on financial materiality (International Financial Reporting Standards, Sustainability Accounting Standards Board), double materiality (European Sustainability Reporting Standards) or impact materiality (Global Reporting Initiative) may not align with local ecological and socioeconomic contexts. For example, International Financial Reporting Standard S2 prioritizes climate risks and thus offers limited guidance on biodiversity-specific risks, which may be of importance in agrarian economies. Policymakers may need to balance global investor and stakeholder expectations with domestic resource constraints when implementing the standards. In addition, S1 and S2 emphasize disclosures of investor-relevant biodiversity risks such as supply chain disruptions or regulatory penalties from deforestation. However, many developing countries lack market mechanisms for pricing biodiversity risks, making financial materiality assessments difficult. For example, smallholders in developing countries may face significant ecosystem impacts without triggering reporting thresholds. The cost of compliance, such as hiring biodiversity specialists and assurance providers or deploying remote-sensing technologies, could be prohibitive for small and medium-sized enterprises in developing economies that are part of the supply chains of larger companies based in developed economies. The International Sustainability Standards Board offers scalability provisions, yet these assume baseline capacities that may often be absent in low-income regions.

32. The International Sustainability Standards Board industry-specific metrics are designed for larger companies. Informal sectors that are dominant in developing countries may remain beyond the scope of such standards. For example, the standard on the extractives and minerals processing sector requires mining firms to disclose habitat restoration, and reporting on this standard is less feasible for artisanal miners who often generate significant ecological impacts. The standard on agricultural products focuses on large agribusinesses; for small-scale farmers, who make significant contributions to food production and biodiversity impacts in developing countries, reporting is likely to be prohibitive.

33. European Sustainability Reporting Standard E4 mandates stringent biodiversity-related disclosures, such as on habitat fragmentation and species protection. These may affect exporters based in developing countries. Double materiality involves both ecological impacts and financial implications, and compliance requires advanced monitoring systems such as satellite tracking and species inventories. For example, E4 requires supply chain due diligence, which may exclude small producers unable to afford certification. The forthcoming simplification of the application of the European standards may reduce this barrier.

¹⁸ See <https://www.efrag.org/en/news-and-calendar/news/efrag-releases-progress-report-on-esrs-simplification>.

34. Global Reporting Initiative standard 101 offers flexibility through tiered reporting (disclosure 101-2) and ecosystem-specific metrics. This approach may be more aligned with disclosure needs and capacities in developing countries, where smaller entities forming part of the value chains of multinational companies are more prevalent. Investors and other stakeholders can benefit when consolidated ecosystem information is prepared on a consistent basis. Disclosure 101-3 serves to encourage community-led conservation data, recognizing traditional knowledge held by Indigenous People.

35. The Task Force on Nature-Related Financial Disclosures locate-evaluate-assess-prepare methodology helps firms to identify, assess and manage nature-related dependencies, impacts, risks and opportunities but relies on biodiversity databases that may often be incomplete in developing countries. For example, general recommendation 3 indicates the need for location-specific assessments, thereby supporting the creation of publicly available databases with information on local biodiversity areas. However, biodiversity data available in global databases tend to be concentrated on a few countries; for example, 79 per cent of the data of the Global Biodiversity Information Facility comes from only 10 countries.¹⁹

36. Policymakers may consider the following points in developing adoption and implementation strategies for disclosure requirements and standards on biodiversity:

- (a) Leveraging existing biodiversity-related statutory reporting regulations;
- (b) Initiating a phased implementation approach by prioritizing high-impact sectors;
- (c) Building regulatory, institutional and human capacities in due course;
- (d) Leveraging regional cooperation, for example, by sharing biodiversity monitoring technologies, such as satellite systems;
- (e) Encouraging standard setters to develop more scalable disclosure requirements and standards by taking into account the needs of small and medium-sized enterprises, including those based in developing countries.

B. Human capital

37. The practical implementation of human capital-related disclosure requirements and standards is likely to pose challenges, particularly in developing countries, due to informal labour markets, limited institutional capacities and competing socioeconomic priorities.

38. International Financial Reporting Standards S1 and S2 (including Sustainability Accounting Standards Board sectoral metrics), the European Sustainability Reporting Standards and the Global Reporting Initiative framework each present distinct requirements that may not align with circumstances in developing countries. S1 is focused on financially material human capital risks and the Global Reporting Initiative emphasizes broader stakeholder impacts, such as working conditions and fair wages. The European Sustainability Reporting Standards also take into consideration adequate wages within working conditions. Implementing countries, particularly developing countries, may need to balance global compliance with the characteristics of the domestic labour market, in which informal employment often forms a significant proportion of the workforce. S1 and S2 prioritize human capital-related disclosures linked to financial performance, such as workforce stability and skills gaps. However, these metrics often overlook non-financial impacts critical in developing economies, such as those related to child labour or informal sector conditions. For example, S2 addresses climate-related workforce transitions but does not mandate living-wage disclosures, a key issue in low-income countries.

39. Compliance costs, such as with regard to data collection and assurance requirements, may disproportionately burden small and medium-sized enterprises, which form the foundation of many developing economies. International Financial Reporting Standard S1

¹⁹ Hughes AC, Orr MC, Ma K, Costello MJ, Waller J, Provoost P, Yang Q, Zhu C and Qiao H, 2021, Sampling biases shape our view of the natural world, *Ecography*, 44(9):1259–1269.

allows for scalability, yet the focus on investor disclosure needs may exclude socioeconomic circumstances in which human capital risks have not yet been priced into markets.

40. European Sustainability Reporting Standard S1 mandates comprehensive human capital-related disclosures, affecting developing-country exporters. Double materiality involves social impacts, yet the standard may imply a need to maintain advanced human resources management systems, such as pay equity analyses and workforce gender equity, which may often be lacking in low-resource settings.

41. The Global Reporting Initiative standards, including 401 and 403, provide tiered reporting options and context-specific metrics, making them more adaptable to developing economies. For example, standard 402 on labour and management relations accommodates informal sector dialogue structures. However, the voluntary nature of the standards limits regulatory support for implementation.

42. Policymakers may consider the following points in developing adoption and implementation strategies for disclosure requirements and standards on human capital:

- (a) Leveraging existing human capital-related statutory reporting regulations;
- (b) Taking into consideration structural differences between developed and developing economies, while meeting the expectations of investors and other stakeholders;
- (c) Adopting phased implementation, prioritizing high-impact sectors, such as mining and textiles, using a modular approach;
- (d) Building regulatory, institutional and human capacities in due course;
- (e) Making use of simplified disclosure templates, as initial steps, such as for use by small and medium-sized enterprises.

V. Conclusion and issues for further discussion

43. The biodiversity and human capital-related disclosure requirements and standards presented in this note have a high degree of compatibility and interoperability, along with some differences in user orientation. In addition to the issues presented in this note, delegates at the forty-second session of the Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting may wish to consider the following questions:

- (a) What are some actions that policymakers can take to support high-quality disclosures on these topics?
- (b) What kinds of measures could standard setters adopt towards the full harmonization of their standards, going beyond interoperability?
- (c) How can existing national biodiversity and human capital-related disclosures and related statutory regulations be leveraged, to facilitate the preparation of disclosures on these topics?
- (d) How can enterprise-level performance in these areas be aggregated, to support reporting on progress in meeting the Sustainable Development Goals targets on these topics?
- (e) How can regional partnerships for the promotion of sustainability reporting support progress in meeting the requirements of continuously evolving standards on these topics?
- (f) How can the Intergovernmental Working Group of Experts support member States in endeavours to achieve high-quality disclosures in these areas?

Annex I

Comparison of biodiversity-related disclosure requirements, recommendations and standards

Topic	International Sustainability Standards Board International Financial Reporting Standards S1 and S2	European Sustainability Reporting Standard E4	Global Reporting Initiative standards 101 (2024) and 304	Task Force on Nature-Related Financial Disclosures
Biodiversity risks and dependencies	S1: Material financial risks (e.g. supply chain disruptions from biodiversity loss) Sustainability Accounting Standards Board metrics: Sector-specific risks (e.g. metals and mining: Share of proved and probable reserves in or near sites with protected conservation status or endangered species habitats)	Mandated disclosure of dependencies and impacts (e.g. raw material sourcing, ecosystem services)	101-4: Identification of biodiversity impacts 101-6: Direct drivers of biodiversity loss 304-1: Operations in sensitive areas 304-2: Impacts on species listed by International Union for Conservation of Nature	Locate-evaluate-assess-prepare methodology: Location-specific material dependencies, impacts, risks and opportunities; disclosure of priority locations, including proximity to sensitive locations
Ecosystem impacts	S2: Climate-linked degradation (e.g. carbon sinks) Board metrics: Sector-specific (e.g. oil and gas: Spill impacts)	Quantified degradation (e.g. size, scale and frequency of occurrence and speed of impacts on biodiversity and ecosystems)	101-6: Direct drivers of biodiversity loss 101-7: Changes to state of biodiversity 101-8: Ecosystem services 304-3: Habitat destruction (e.g. deforestation, wetland loss)	Metrics on ecosystem conditions (e.g. forest health, wetland degradation)
Regulatory changes	S1: Emerging regulation risks (e.g. biodiversity taxes) Board metrics: Sector-specific (e.g. oil and gas exploration and production, management of legal and regulatory environment)	Explicit regulatory risks (e.g. Kunming-Montreal Global Biodiversity Framework targets, national laws)	2: General disclosures 2-27: Compliance with laws and regulations	Scenario analysis: Risk categories, regulatory shifts (e.g. nature-related disclosure laws)
Metrics and targets	S1 and S2: General sustainability metrics Board metrics: Industry-specific key performance indicators (e.g. land reclaimed,	Quantitative targets (e.g. share of protected areas, restoration goals)	304-1: Size of operational area 304-3: Size and location of all habitat areas protected or restored	Global disclosure metrics and additional sector-specific metrics

Topic	<i>International Sustainability Standards Board International Financial Reporting Standards S1 and S2</i>	<i>European Sustainability Reporting Standard E4</i>	<i>Global Reporting Initiative standards 101 (2024) and 304</i>	<i>Task Force on Nature-Related Financial Disclosures</i>
Alignments	water withdrawals) Climate Disclosure Standards Board: Qualitative and quantitative natural capital metrics S1 and S2: Aligned with Task Force on Nature-Related Financial Disclosures Board metrics: Sector-specific	Fully aligned with corporate sustainability reporting directive and Kunming-Montreal Global Biodiversity Framework	304-4: Number of species on the International Union for Conservation of Nature red list or national conservation lists in areas affected by entity Linked with Sustainable Development Goals 14 and 15 and Kunming- Montreal Global Biodiversity Framework	Aligned with International Sustainability Standards Board, European Sustainability Reporting Standards, Global Reporting Initiative, Kunming-Montreal Global Biodiversity Framework and Science Based Targets Network

Source: UNCTAD.

Annex II

Comparison of international standards across key human capital, labour and social disclosure dimensions

Criteria	International Sustainability Standards Board (including Sustainability Accounting Standards Board metrics)	European Sustainability Reporting Standards	Global Reporting Initiative
1. Scope and applicability	Voluntary but market-driven (investor demand); industry-specific	Mandatory for large companies (2024 and later) and listed small and medium-sized enterprises (2026 and later) in European Union	Voluntary, global; used by over 10,000 entities
2. Materiality approach	Single materiality (financial); industry-specific materiality	Double materiality (financial and impact); must report on all European Sustainability Reporting Standard topics unless deemed immaterial	Single materiality (impact); entities select relevant topics
3. Workforce composition	Quantitative: Gender diversity share (executives and non-executives), turnover rates (varies by industry) Qualitative: Diversity risks and/or opportunities	Quantitative: Gender, contract types (full- or part-time) Qualitative: Diversity, equity and inclusion policies, pay gap explanations	Quantitative: Gender breakdown, by region, wage gaps between women and men (2-7) Qualitative: Diversity, equity and inclusion commitments (405)
4. Health and safety	Quantitative: Injury frequency rates (e.g. Sustainability Accounting Standards Board metric IF-EU-320a.1) Qualitative: Risk mitigation strategies	Quantitative: Injury and/or fatality rates, near-misses (S1-14) Qualitative: Occupational health and safety policies, mental health programmes	Quantitative: Total reportable incident rates, lost-time injury rates (403) Qualitative: Worker consultation processes (402)
5. Training and skills	Qualitative: Employee recruitment, development and retention (e.g. HC-BP-330a.1 and workforce adaptability initiatives)	Quantitative: Training expenses per employee (S1-4) Qualitative: Reskilling for transitions	Quantitative: Average training hours (404-1) Qualitative: Career development pathways (404-3)
6. Labour relations	Quantitative: Share of workforce employed under collective agreements (e.g. IF-WM-310a.1) Qualitative: Labour relations risks	Quantitative: Share covered by collective agreements (S1-8) Qualitative: Social dialogue mechanisms	Quantitative: Grievance cases resolved (2-25) Qualitative: Union relations (402.1), freedom of association and collective

<i>Criteria</i>	<i>International Sustainability Standards Board (including Sustainability Accounting Standards Board metrics)</i>	<i>European Sustainability Reporting Standards</i>	<i>Global Reporting Initiative</i>
			bargaining (2, 2-30, 407)
7. Human rights due diligence	Quantitative: Supplier audit results (e.g. CG-AA-430b.1) Qualitative: Supply chain risks	Workers in the value chain (S2) Qualitative: Policies, grievance mechanisms	Quantitative: Violations identified (412) Qualitative: Due diligence processes
8. Compensation	Quantitative: Average wage versus minimum wage (e.g. SV-HL-310a.3) Qualitative: Compensation risks	Quantitative: Chief-executive-officer-to-worker pay ratio, share below living wage (S1-16) Qualitative: Adequate wages (S1-10)	Quantitative: Wage gaps by gender and/or ethnicity (405) Qualitative: Pay equity policies
9. Working conditions	Quantitative: E.g. share of drivers classified as independent contractors (e.g. TR-AF-310a.1) Qualitative: Contingent labour risks	Quantitative: Share of temporary workers, overtime hours (S1-1) Qualitative: Remote work policies	Quantitative: Harassment incidents (406) Qualitative: Anti-harassment measures
10. Enforcement and penalties	No penalties; investor-driven compliance	Fines of up to 0.1 per cent of global revenue for non-compliance (corporate sustainability reporting directive)	No penalties; market and/or stakeholder pressure
11. Value chain focus	Industry-specific (e.g. apparel, mining)	Mandatory disclosure of workers in supply chains (S2)	Encouraged (414)
12. Alignment with other frameworks	Compatible with European Sustainability Reporting Standards and Global Reporting Initiative standards for dual reporting	Integrates Global Reporting Initiative standards, references Sustainability Accounting Standards Board metrics for sectoral gaps	Can be used alongside European Sustainability Reporting Standards and/or Sustainability Accounting Standards Board metrics

Source: UNCTAD.