Staff paper

Agenda reference: 3

ISSB Meeting

Date	**January 2025**
Project	**Research Project – Biodiversity, ecosystems and ecosystem services**
Topic	**Evidence of Investor Interest in BEES-related risks and opportunities**
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Purpose of the paper

1. This paper summarizes the findings related to the research question 'what are the biodiversity, ecosystems and ecosystem services (BEES)-related information needs of investors, and how is current disclosure practice meeting or failing to meet these needs?' [1, 2]

2. These findings are based on engagements with 161 investors and other organizations in the investment value chain and the evidence obtained through a literature review.[3] The paper summarizes the results along four dimensions:
   (a) the level and drivers of investor interest in BEES-related risks and opportunities.
   (b) the type and sources of information used by investors.
   (c) how investors use such information in their investment decision-making processes.

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[1] See AP2B: Biodiversity, ecosystems and ecosystem services and human capital research projects, Research design and approach, July 2024, for background on the BEES research project and the research area of evidence of investor interest.
[2] The term biodiversity, ecosystems and ecosystem services (BEES) is used synonymously with 'nature' and 'nature-related' in this paper. Investor means 'primary user' as defined in IFRS S1, Appendix A.
[3] See AP3C-Literature review on the evidence of investor interest, November 2024.

(d) the information challenges, barriers or gaps faced by investors.

3. This paper does not seek any decisions from the ISSB.

Structure of the paper

4. The paper is structured as follows:

   (a) Approach to the research on evidence of investor interest

   (b) Summary of findings and next steps

   (c) Analysis

      (1) Overview of investor interest and uses of available information on BEES-related risks and opportunities (covering dimensions noted in paragraphs 2(a)-(c)).

      (2) Investor needs on disclosures: Evidence of information needs, information gaps and challenges (covering dimension noted in paragraph 2(d)).

   (d) Appendix A: Composition of investor engagements

Approach to the research on evidence of investor interest

5. From June 2024 to January 2025, the staff engaged with over 300 individuals from 161 investor organisations and other organisations in the investment value chain using bilateral discussions and roundtables. Engagements covered a diverse set of organisations and functions, including asset managers, asset owners, sell-side research firms and banks, based in Europe, North America, Africa, Latin America and the Caribbean, the Asia-Pacific region and the Middle East. Appendix A details further the engagement process.

6. The staff complemented the investor-focused conversations with a literature review of over 100 sources on investor interest in BEES-related risks and opportunities, including investor information sources, uses and challenges.

Summary of findings and next steps

7. Most investors are interested in incorporating BEES-related risks and opportunities into their investment decisions. However, they are in the preliminary stages of determining the information that is most decision useful. Since assessing BEES-related risks and opportunities is complex, investors tend to use multiple sources of information from companies, third-party data providers and public sources. (see paragraphs 16, 19 to 21)

8. Drivers of investor interest in BEES-related risks and opportunities include risk management, enhanced returns, asset owner mandates to their investment managers and regulation. (see paragraphs 17 and 18)

9. Investors' use of information often starts with a focus on specific sectors with high BEES-related impacts and dependencies, which are assumed to be associated with greater BEES-related risks and opportunities and then assessing the specific topics within those sectors such as water, land use, and pollution. Investors use this information to guide and prioritise their analysis at the entity level and to inform engagements with entities. (see paragraphs 25 to 32)

10. Investors' identified needs on improvements in BEES-related disclosures include a global disclosure baseline, more standardized terminology and comparable information, better data availability and quality and further rationalisation of BEES-related indicators and metrics. Investors would like better information on company asset/activity location, risks and opportunities (versus impacts and dependencies) including those arising from supply chains and more information on an entity's BEES-related strategy including anticipated effects on financial position and financial performance. (see paragraphs 34 and 35)

11. Investors also identify several challenges they face in using BEES-related information. These challenges include measurement and methodological challenges to determine risks and effects on entity prospects from information on impacts and dependencies available to them; lack of consensus on how to value natural capital; difficulties aggregating site-

specific information to the entity level; difficulties in combining available datasets; difficulties integrating information into investment models; concerns with potential burdens from the quantity of information possible; and challenges filling data gaps through estimated and modelled data. (see paragraph 36)

12. In this phase of research, the staff intentionally posed broad and open-ended questions to investors to elicit a range of views (see Appendix A). In further research, the staff will have the opportunity to ask more specific questions and dive deeper into issues that investors have raised in areas where the ISSB considers further analysis important for its decision making. For example, it may be useful to gain a more nuanced understanding of investor needs for:

    (a) Information about a company's strategy in response to BEES-related risks and opportunities, including the anticipated effects on financial position and performance, transition plans and biodiversity credits.

    (b) Natural capital valuation of impacts and dependencies and its implications for disclosures around anticipated effects on an entity's financial position and performance.

    (c) Information on location of an entity's assets and activities, including how investors will use it in investment decisions, and whether investors can aggregate it to an entity or portfolio level.

    (d) Further streamlining and rationalising metrics for BEES-related risks and opportunities to be more decision-useful for investors and not obscure material information.

13. Further research might also take a deeper look into the specific information needs and challenges of investors in emerging markets and developing economies (EMDEs), particularly given the BEES-related risks and opportunities facing EMDEs. In this regard, engagements with multilateral, regional and national development banks, funding

organizations and sovereign wealth funds targeting investments in EMDEs as well as private project financers might be particularly helpful. (see paragraph 19 to 21)

14. Investors mentioned regulation and policy as one driver of investor interest both by creating BEES-related risks and opportunities for companies (transition risk) and by improving the availability and quality of disclosed information (see paragraph 18). Understanding evolving BEES-related regulatory requirements including for example, through further interactions with the ISSB's Sustainability Standards Advisory Form (SSAF) could be useful to assist the ISSB in understanding information needs and related interoperability considerations.

Questions for the ISSB

1. What questions does the ISSB have regarding the BEES-related information needs of investors as summarized in this paper, and how current disclosure practice is meeting or failing to meet these needs?
2. What areas of investor information needs raised in this paper does the ISSB believe warrant further investigation in the research project to adequately prepare and support the ISSB in its decision making around standard setting?

Analysis

15. This section discusses the evidence from engagements and the literature of investor interest in BEES-related risks and opportunities and how investors use available information. It then assesses investors' information needs on BEES-related disclosures, including the challenges they face.

Overview of investor interest and uses of available information on BEES-related risks and opportunities

16. Most investors recognise the importance of considering BEES-related risks and opportunities in investment decisions. While investors believe it is important to assess BEES-related risks and opportunities, they are at the preliminary stages of determining the information and methodologies most useful for investment decisions.

17. A range of factors drive investor interest (PRI, 2020) (Morningstar, 2023). Investors mentioned three primary interests in the use of BEES-related information - assessing investment risks, improving financial returns, and informing their investment strategies or mandates for their investment managers (Boffo & Patalano, 2020) (PwC, 2022) (Capital Group, 2022) (WWF and Oliver Wyman, 2024) (CFA Institute, 2020) (CFA Institute, 2022b) (Boston Consulting Group, 2024) (UNEP-FI, 2024).

18. Investors identify policy and regulation as playing an important role in heightening BEES-related risks and opportunities that companies face, therefore driving their interest in assessing such risks and opportunities. Investors also identify the role of policy and regulation in driving their interest in BEES-related information in other ways, namely, related to their own reporting requirements and in deepening their understanding of BEES-related risks and opportunities through improved disclosures.

    (a) First, regulation addressing biodiversity losses and other environmental damages (e.g., EU regulation on deforestation-free products; EU Nature Restoration Law;

India's Biological Diversity Act; France's Article 29; UK's Biodiversity Net Gain (BNG) law) may increase an entity's transition risks (e.g., compliance, legal and reputation-related requirements and associated risks). Such a potential increase in transition risks is likely to further drive investor interest in assessing those risks and understanding how entities are addressing those risks (Ecolex, 2024).

(b) Second, investors may need to assess their own BEES-related portfolio impacts and risks because they are directly subject to reporting regulations such as the EU Sustainable Finance Disclosures Regulation (SFDR). The SFDR, for example, requires investors to "disclose if investee activities negatively impact biodiversity-sensitive areas and the proportion of investments allocated to firms that both negatively impact biodiversity and lack a plan to redress such impact". (JP Morgan Asset Management, 2023, p. 8).

(c) Third, regulations requiring mandatory disclosure of BEES-related information are increasing (e.g., India's Business Responsibility and Sustainability Reporting (BRSR); EU Corporate Sustainability Reporting Directive (CSRD); Germany's Supply Chain Due Diligence Act). In cases where such requirements lead to more decision-useful information becoming available to investors, investors' interest may be stimulated in two ways. First, investors with a broad interest or concern in BEES-related risks and opportunities but no incorporation of these considerations in their investment processes may be motivated to start taking such risks into account more explicitly or systematically by the availability of information. Second, investors already assessing BEES-related risks and opportunities may see the additional information as an opportunity to deepen and extend their assessments.[4]

[4] Many investors also mentioned that they were hopeful that new voluntary disclosure frameworks, such as the Recommendations of the Taskforce on Nature-related Financial Disclosures (TNFD) and GRI-101 Biodiversity standards, also will make available more information that could be decision useful (ERM Sustainability Institute, 2024) (GARP, 2024) (GRESB, 2023) (Whitehorn, et al., 2019) (WWF and Oliver Wyman, 2024).

19. The nature and extent of investor interest in BEES-related risks and opportunities, however, varies across geographic areas. Based on available information, the staff notes that investor interest appears to be strong in North America and Europe, mixed in the Asia-Pacific region, and relatively lower in Latin America and the Caribbean and Africa.

20. For instance, Morningstar reported that investors in biodiversity funds are predominantly from North America and Europe. Further, biodiversity funds, which tend to focus on companies aiming to reduce their BEES-related risks or capitalising on BEES-related opportunities, have virtually no exposure to entities in emerging markets (Morningstar Sustainalytics, 2024, p. 12).[5]

21. The staff's engagements with asset managers based in Africa indicated that consideration of BEES-related risks or opportunities is not a significant factor in their investment decisions at this time.[6] The African asset managers we spoke with also said that foreign investors in African entities, primarily European development financial institutions, were mainly driving BEES-related considerations in investment decisions. However, capacity building efforts on BEES-related risks and opportunities in the region are underway.[7] For example, the African Natural Capital Alliance is sponsoring TNFD pilots with 21 African financial institutions of which 6 are in the process of funding nature positive projects and the Alliance has noted at least 10 biodiversity credit projects being piloted in Africa to attract investor interest. In Latin America, investors that staff spoke with from Brazil

[5] Morningstar attributes this to firms in developed markets facing lower ESG risks, having more policies to address biodiversity loss and greater resources to put towards innovative biodiversity-related solutions than their counterparts in EMDEs.

[6] The staff had discussions with five asset managers from different countries in Africa mainly focused on private market investing and project financing. The conclusions drawn from these limited engagements should not be taken as generally representative of the landscape of BEES-related investor interest in Africa, for example, across different asset classes.

[7] The recent literature indicates that the BEES-related investment landscape in Africa is changing quickly because several efforts are underway in Africa that may stimulate investor interest in BEES-related risks and opportunities. See the African Natural Capital Alliance reports on the need for regulatory awareness, investing in nature, nature stress testing for African banks, and nature data. Also see UN Economic Commission for Africa Framework for a national nature strategy and the Sustainable Market Initiative Africa Council G20 Nature investment roadmap.

indicated a strong developing interest in BEES-related risks and opportunities primarily driven by Brazilian environmental regulations and mandated corporate disclosure - in the case of one European bank subsidiary in Brazil, the EU SFDR requirements.

Information available to and used by investors

22. Investors recognise that entities are in the initial stages of disclosing information on their BEES-related risks and opportunities.[8] Although many entities have started disclosing information related to BEES, this information is limited, particularly regarding strategy, targets, risks and opportunities (McKinsey, 2024, p. 3).

23. Investors indicated that current disclosures include qualitative information related to an entity's direct operations, such as an entity's BEES-related policies and commitments (CFA Institute, 2020) and its controversial, reputational or liability-related events. Entities disclose limited quantitative information, primarily consisting of metrics for discrete topics such as water, land area/cover change, effluent/pollution discharge quantities or recycling amounts. Upstream/downstream value chain information is typically not disclosed.

24. Investors that staff spoke with would prefer sourcing information directly from entity reports, financial statements, entity announcements, and engagements with the entity. Due to limited entity-sourced information available today, most investors use indirect sources of information including public information and information from third parties such as data and analytical firms and ESG/biodiversity rating providers.[9] Third-party provided information includes BEES-related impacts of products/services, direct operations, or value chains; geospatial location data and analysis; data on land cover

[8] For further details, see paragraphs 55 to 59 in AP3C: Biodiversity, Ecosystems, and Ecosystem Services (BEES) - Literature review on the evidence of investor interest , November 2024.
[9] Investors staff spoke with frequently mentioned use of the 'E' component of ESG scores to assess an entity's BEES-related risks.

change and water; biodiversity foot printing metrics; or remote sensing/site assessments.[10] (RSMetrics, 2023) (PRI, 2023a) (NatureMetrics, 2023) (MSCI, 2024a) (Colombo, 2024a) (Colombo, 2024b).

How investors use information in investment decisions

25. Fundamentally, investors are seeking to understand how BEES-related risks and opportunities might affect the risks and returns on their investments.[11] The causal chain that investors assume is that entities' business activities are dependent to varying degrees on nature and natural resources and that these dependencies (use of nature-related resources in an entity's operations) lead to positive or negative impacts on nature. Depending on the level and nature of impact, an entity may face various BEES-related business risks or opportunities such as compliance risks, input price volatility, limitations on waste and pollution output, etc. To understand an entity's BEES-related risks and opportunities, investors indicated they often take a two-prong approach given the limited information specific to the entity level.

26. First, because an entity's effects on ecosystems and ecosystem services are due to multiple causes, in order to identify areas in the portfolio of high risk or opportunity investors often find it easier to first measure the level (high/medium/low) of impacts and dependencies at a sector level and identify sectors with high BEES-related impacts/dependencies (PwC, 2023).[12]

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[10] Several investors expressed concerns with third-party services, especially those using "black box" models, with one investor stating, "we don't know where the numbers are coming from…."

[11] Most investors are interested in BEES-related idiosyncratic and market (systematic) risks. However, universal asset owners and those with longer investment horizons mentioned BEES-related systemic risk as a concern but did not have measurable risk targets or assess systemic risks in their portfolios in any comprehensive manner. Nor was there a consensus on the definition of BEES-related systemic risk (e.g., financial, ecosystem, real economy). Some investors indicated opportunities (returns) were a secondary focus relative to risk, stating many opportunities currently were in the private equity/credit and venture capital spaces (Bloomberg NEF, 2024).

[12] BEES-related impacts are often determined based on the IPBES drivers – land use change, resource use and exploitation, pollution, invasive species and climate change.

27. Currently, most investors use estimates of sector-level impacts and dependencies obtained from third-party models or by using open-source tools such as ENCORE or IBAT. [13,14] Investors assume entities in identified high-impact/dependency sectors are likely to face higher BEES-related risks and opportunities (IBAT, 2020) (Natural Capital Finance Alliance, 2018) (Iceberg Data Lab, 2023) (PRé Sustainability, 2023) (Netherlands Enterprise Agency, 2021) (TNFD, 2023a). Investors also commonly refer to the SASB materiality map to identify sectors most associated with nature-related risks and opportunities. The relevant sectors/industries that investors most frequently mentioned during our engagements included, in no particular order of priority, Food & Beverage/Agriculture Products, Consumer Goods/Apparel, Accessories and Footwear, Extractives & Mineral Processing, Renewable Resources/Forestry Management and Infrastructure.

28. Within the relevant sectors, investors attempt to identify the significant BEES-related topics and subtopics associated with the sector's high impacts and dependencies. The topics mentioned frequently by investors we spoke with included water, land use and land use change, pollution/waste, and biodiversity loss (GARP, 2023) (GARP, 2024). Investors always mentioned water, characterizing it as the most advanced compared to other BEES-related topics from a measurement perspective and relevant to many economic sectors and social issues (e.g., sanitation, health).

29. Second, using this drill down approach, investors will prioritise entities in their portfolio within the identified sectors for further assessment on the relevant BEES-related topics/subtopics to evaluate the entity's potential business risks, strategies and effects on

[13] ENCORE (Exploring Natural Capital Opportunities, Risks and Exposure) sets out how the economy – sectors, subsectors and activities – depends on and impacts nature. Investors can use data from ENCORE to identify BEES-related risks they are exposed to through their lending, underwriting and investment in high-risk industries and sub-industries.
[14] IBAT (Integrated Biodiversity Assessment Tool) is a tool that provides access to three authoritative global biodiversity datasets: IUCN Red List of Threatened Species, World Database on Protected Areas, and World Database of Key Biodiversity Areas. IBAT helps identify areas of biodiversity importance to which investors can link corporate location data to help them consider biodiversity risks.

its prospects. Investors indicated they often start their assessment of a portfolio entity at a qualitative level, looking at an entity's BEES-related commitments and policies and engaging with the entity on its BEES-related strategy and plans to seek further information on the entity's specific impacts, dependencies, risks and opportunities.

30. Another consideration in assessing BEES-related risks and opportunities is measuring changes over time of an entity's impact and dependency on overall ecosystem condition and integrity, state of nature, or overall changes in the composition or value of ecosystem services. Due to data and methodology challenges, however, very few investors indicated that they assess entity-level BEES-related risks and opportunities at this more integrated or holistic ecosystem level at the present time.[15]

31. At an entity-level, the literature further reveals five basic approaches investors use to incorporate available BEES-related information in investment decisions[16] – screening techniques, fundamental analysis, quantitative analysis, thematic analysis, and engagement/proxy activities (ShareAction, 2020) (Duuren, Plantinga, & Scholtens, 2016) (PRI, 2020a) (PRI, 2023a).[17] Fundamental analysis is the most common method used by investors, followed by screening but many investors combine techniques (PRI, 2023) (Duuren, Plantinga, & Scholtens, 2016) (CFA Institute and PRI, 2018) (CFA Institute, 2022a) (CFA Institute, 2022b) (JP Morgan Asset Management, 2023).

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[15] 'State of nature' data is often inconsistent, out-of-date, and difficult to access (TNFD, 2023). Quantitative indicators and methodologies of overall biodiversity health and integrity, however, are beginning to emerge (Cox, 2024) (Ecosystem Condition Protocol, 2024) (Hill, et al., 2022) (Natural History Museum (London), 2024).

[16] These approaches are also common to other types of ESG information besides BEES-related information.

[17] Investment **screening** includes negative "exclusionary" screening or positive "inclusionary" screening of potential investments based on pre-established criteria. **Fundamental analysis** involves examining an entity's financial statements, macroeconomic and microeconomic factors, and an entity's competitive and market position to determine a security's intrinsic value and factors that influence its worth. **Quantitative analysis** uses mathematical and statistical analysis, algorithms and computer models to help forecast market trends and other market factors affecting financial assets prices. **Thematic investing** is a longer-term investment approach that relies on research exploring long-term macroeconomic, geopolitical and technological trends to identify areas of above market returns or emerging risks.

32. In these approaches, the literature indicates investors use BEES-related information to:

    (a) Inform their investment policies, restrictions and commitments both overall and at a sector level and, for some asset owners, to inform their investment strategies and mandates for their investment managers.

    (b) Establish screening criteria and determine screening results.

    (c) Identify BEES-related factors at the macro, sector and entity-level to incorporate into fundamental analyses of an entity's prospects.

    (d) Identify longer-term trends such as the emergence of new nature-positive business models, new nature-positive technologies/processes and emerging governmental policies for thematic analysis (AXA, 2023).

    (e) Determine the BEES-related factors affecting investment risks and returns for parameterizing into quantitative investment models.

    (f) Inform their entity engagements and proxy voting at shareholder meetings.

Investor needs on disclosures: Evidence of information needs, information gaps and challenges

33. All investors expressed the need for increased data availability and quality. However, investors are in the preliminary stages of learning and determining what information on BEES-related risks and opportunities is material and decision useful. As a result, investors have diverse and unsettled views on decision-useful information although the staff identified through our engagements and the literature review some common information needs listed below.

34. Investors expressed the need for improved information in the following areas:

    (a) **More risk and opportunity focused information.** Qualitative information on impacts and, to a lesser extent, dependencies is the most available information at

present. Less information is available on business risks and opportunities (Mair, et al., 2024). Some investors speculate that this may in part be due to a lack of methodologies to determine how impacts and dependencies translate to specific, quantifiable business risks and opportunities especially financial risks (Carvalho, Cojoianu, & Ascui, 2023) (Ascui, Ball, Kahn, & Rowe, 2021) (Smith, Ascui, O'Grady, & Pinkard, 2024). Investors desire more quantitative information on risks and opportunities, including financial risks under different scenarios.

(b) **Information on the location of an entity's assets and activities and related impacts and dependencies at each location**. Most investors point out that BEES-related risks and opportunities are location specific and vary based on an entity's assets and activities at each location, the specific BEES-related pressures of these assets/activities, the type of ecosystem at a location and across time. Location data, however, is largely unavailable. For example, geospatial data on the location of entity operations, including types of assets, their ultimate owner and activities at each location, is difficult to obtain but viewed as critical information by investors (MSCI, 2024a) (BNP Paribas Asset Management, 2024). Other investors mention that some entities may not want to provide such information due to security concerns. However, the level of granularity investors desire or need and how investors would use such information in their investment decisions is unclear. One investor in Latin America and one in Europe raised the idea of location information only for assets or activities generating a sizeable portion of an entity's revenues or otherwise being high-risk sites.

(c) **Information on BEES-related risks and opportunities in the supply chain**. Investors note an almost complete lack of supply chain information for BEES-related issues (WWF and Oliver Wyman, 2024) and entities are not capturing and disclosing what limited information is available in a systematic fashion. Investors point out the importance of supply chain information around BEES-related issues but note that entities they invest in often find it challenging due to supply chain

complexity, supplier numbers, and lack of commodity traceability. Some investors raise the questions of which type of coverage for supply chain disclosures is most useful (e.g., full supply chain, Tier 1 suppliers, Top 5 or 10 suppliers, etc.) and how to assess the veracity and usefulness of different sustainable commodity certification schemes when assessing an entity's supply chain sustainability.

(d) **Information on an entity's BEES-related strategy and the effects on its prospects.** Most investors believe that forward-looking information, especially about an entity's BEES-related governance, strategy and anticipated effects on financial position and financial performance and plans to manage BEES-related risk, is a critical disclosure element. The literature confirms this point. A 2022 global survey of 227 investment professionals indicates that 73% wanted to see the cost to meet an entity's BEES-related strategy commitments (PwC, 2022). This includes information such as an entity's BEES-related targets and goals, transition pathways and transition plans to more sustainable "nature-positive" operations[18] and reliance on biodiversity offsets/credits[19] to achieve nature-positive outcomes, financial implications of the strategy (e.g., effects on revenues, costs, capital expenditures, etc.) and disclosure of performance against the strategy.

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[18] A report by CDP, in consultation with GFANZ, SBTN, TNFD, WBCSD, WEF and WWF, defines a nature-related transition plan as an aspect of an organisation's overall business strategy that lays out the organisation's goals, science-based targets, actions, accountability mechanisms and intended resources to respond and contribute to the transition implied by the Global Biodiversity Framework (GBF). For further information on nature-related transition plans, see CDP (2024) *What Are Nature Strategies and Nature Transition Plans? TNFD (2024) Discussion paper on Nature transition plans;* Transition Plan Taskforce (2024) *The Future for Nature in Transition Planning;* WWF (2023) *Nature In Transition Plans: Why And How?;* and WWF (2024) *Catalysing Change: The Urgent Need For Nature Transition Plans.*

[19] **Biodiversity offsets** are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from an entity's value chain after appropriate prevention and mitigation measures have been taken. **Biodiversity credits** are verifiable, quantifiable and tradable units of biodiversity restored or preserved over a specified period of time. See WEF (2023) Biodiversity Credits: A Guide to Support Early Use with High Integrity and Nature Finance/Taskforce on Nature Markets (2023) The Future of Biodiversity Credit Markets and the Business and Biodiversity Offsets Programme (BBOP) (2012) *Biodiversity Offset Design Handbook-Updated.*

(e) **Better data coverage**. Investors cite the unevenness of data coverage. Coverage gaps in the available information exist for value chains, certain geographies and certain ecosystems (WWF and Oliver Wyman, 2024). For example, there are often data gaps for ocean ecosystems and ocean-dependent sectors and their BEES-related risks and opportunities (BNP Paribas Asset Management, 2024).

35. Investors expressed the need for an improved basis of disclosures in the following areas, to improve the quality of information they receive from entities:

(a) **Entity disclosures based on a global disclosure baseline and more standardized terminology resulting in more comparable information**. Investors indicate that the lack of a global baseline for BEES-related disclosures, including standardized terms and definitions, makes it particularly challenging for them to assess and compare BEES-related risks and opportunities across entities and jurisdictions, potentially leading to suboptimal investment decisions (CFA Institute, 2022b) (BNP Paribas Asset Management, 2024). Lack of standardized disclosures makes verifying information also difficult for investors (Hudson, 2024, p. 4).

(b) **Entity disclosures based on a standard set of core decision-useful metrics**. Many investors believe that the current diversity and number of metrics combined with the lack of consensus on which metrics are decision useful impede their assessment of BEES-related risks and opportunities (Smith, Ascui, O'Grady, & Pinkard, 2024). For example, investors cite the number of different metrics promulgated by various standards, frameworks and organisations as well as the predominant focus of these metrics on impacts rather than dependencies, risks or opportunities. Investors believe that no single metric can capture the diversity of BEES-related risks and therefore a set of core metrics is needed to measure the

distinct aspects of BEES-related risks and opportunities.[20] Despite the number of current metrics, studies indicate that there are gaps in metrics related to dependencies and financial consequences arising from BEES-related risks, among other things (Smith, Ascui, O'Grady, & Pinkard, 2024).

36. Investors also noted several challenges in using currently available information including:

(a) **Ability to combine datasets.** Third-party data providers often collect and collate entity-disclosed data and combine it with other sources of data (e.g., watershed data, land use and land cover data) resulting in several proprietary and open-source datasets available to investors. Investors, however, mentioned that to combine different datasets and/or integrate datasets with their internal systems is important but challenging. TNFD's Nature-related Data Catalyst Initiative has found that not all datasets are set up in a way where they can be integrated easily with each other and investor systems (i.e., different datasets covering different types of information or covering the same information in different ways) (TNFD, 2023).

(b) **Filling Data Gaps**. Investors and third-party data providers often rely on models to estimate data and fill gaps related to an entity's direct operations, supply chain or downstream activities. Modelling, however, is often difficult, needing a certain level of information (historical and across entities) to estimate and calibrate model parameters.

(c) **Aggregating location and site-specific data to the entity level**. Investors face difficulties aggregating location- and site-specific information to the entity or

[20] For example, some investors voiced scepticism that using a single metric, like mean species abundance (MSA) or Potentially Disappeared Fraction of Species (PDF), could either effectively capture overall ecosystem condition, meaningfully inform risk assessments, or be integrated into investment decisions. Investors pointed out this contrasted with a metric like GHG emissions that encapsulated an entity's major contribution to climate change in a single metric. Another concern is whether entities can even influence MSA and PDF metrics through their strategy and performance.

portfolio level stemming from the fact that BEES-related risks and opportunities are different in separate locations, across various times, ecosystems and sectors/industries[21] and measured in separate ways (e.g., water risk versus deforestation). All of this makes it harder to determine an overall entity-level or portfolio-level BEES-related risk exposure.

(d) **Ability to incorporate data into investment decision processes**. Investors cite challenges in their ability to use BEES-related information in their investment processes. These challenges stem from such factors as difficulties determining the most effective information for quantitative investment models, insufficient BEES-related knowledge or expertise within an investor's organization, lack of accepted ways to value natural capital[22] and difficulties measuring risk exposures (CFA Institute, 2022b) (Credit Suisse, 2021) (WWF and Oliver Wyman, 2024, p. 21)

(e) **Obscuring decision-useful information**. Given the multiple areas associated with BEES-related risks and opportunities (e.g., species, biome, habitat), the different pressures and impacts brought by business activities in each area (e.g., pollution, waste, water consumption and quality, land use change, resource use) and the location-specific aspects of how impacts/dependencies lead to risks and opportunities, investors point out that the potential reporting requirements on BEES-related risks and opportunities could be information heavy. While investors appreciate more rather than less information from entities, they express concern

[21] For example, the impact of using of $1m^3$ of water in location X is not equivalent to the use of $1m^3$ of water in location Y. Neither is the use of $1m^3$ of water in location X at time T equivalent to the use of $1m^3$ of water in location X at time T+1 (JP Morgan Asset Management, 2023, p. 11).

[22] Valuation of natural capital and ecosystem services has no widely agreed and accepted methodologies among investors, despite existence of standard economic valuation approaches (Bartkowski, 2017) (Hudson, 2024) (Guer, Mueller, & Schiereck, 2024) (Roland Berger, 2023) (OECD, 2002). For instance, to assess a portfolio's dependency on ecosystem services, investors should, in theory, determine the price of each ecosystem service an entity relies on for every region it operates in. Such an assessment requires advanced models and granular, precisely geocoded data because nature loss drivers and impacts are local. In addition, several BEES-related risks could have reverberating effects, which makes assessing financial risks from nature loss even more difficult. (MSCI, 2024a).

about reporting burdens on preparers and the volume of information facing investors potentially obscuring their ability to assess decision-useful and material information.

37. If the type of information and the basis for disclosures improves (per the needs identified in paragraphs 34 and 35), this has the potential to mitigate many of the challenges investors face in using information that is currently available to them (identified in paragraph 36). For example, better and more comparable entity-disclosed information could obviate the need to combine various datasets while more available information based on a set of core metrics could reduce the need for modelled data to fill gaps. Reduced friction in incorporating BEES-related information in investment processes and enhanced understanding of BEES-related risks and opportunities through better disclosures from entities could prompt further investor interest in considering such risks and opportunities in their investment processes.

Appendix A: Composition of investor engagements

A1. Starting in June 2024, the staff conducted bilateral meetings with 57 organisations and held 13 roundtables to discuss investor interest in BEES-related risks and opportunities. In total, staff engaged with over 300 individuals.

A2. **Sources used to identify investors to engage with**: The staff leveraged several sources to identify investors for engagements, including members of the ISSB and its staff, the ISSB Investor Advisory Group (IIAG), the IFRS Sustainability Alliance, the Sustainability Reference Group (SRG), other standard-setters and framework providers, and investors who responded to the ISSB Request for Information on its Agenda priorities.

A3. **Reaching a representative sample:** To collect representative views, the engagements were held with a range of investor types (asset managers, asset owners, banks), firm size, asset classes (equity, fixed income, lending, private equity/debt), sell-side and buy-side functions, and geography of headquarters (North America, Europe, Asia Pacific region, Africa, Middle East, and Latin America and the Caribbean).

A4. The staff held roundtables with various investor groups including the ISSB's Investor Advisory Group (IIAG), the IFRS Sustainability Alliance, the International Association of Credit Portfolio Managers, the Emerging Markets Investor Alliance, and the International Corporate Governance Network (Tokyo). Staff also conducted roundtables during New York Climate Week and the Council of Institutional Investors Fall conference.

A5. Finally, the staff engaged with some BEES-related data providers, investor-oriented NGOs, and individuals such as the ISSB special advisor on natural ecosystems and a just transition, academics and other subject matter experts.

A6. **Geographic coverage of engagements**: The largest number of engagements were with organisations headquartered in North America and Europe. This is broadly representative of the relative size of the capital markets in these regions. Investors and other

organisations in the investment value chain based in the Asia-Pacific region, Africa, the Middle East and Latin America and the Caribbean represent 23% of total bilateral engagements and 16% of roundtable participation. Staff engaged with many investors headquartered in North America and Europe that invest globally and provided views on investing in EMDEs. Staff considered these views in its overall analysis but did not count these North American and European investors in the EMDE regions in charts 1 and 2 (below).

A7. **Types of organisations engaged**. Most bilateral engagements involved asset managers (49%) followed by banks (12%); data providers (11%); and NGOs, experts or consultants (11%). Similarly for roundtables, asset managers represented most of the participation (50%); followed by banks (13%); NGOs, experts or consultants (12%); and then asset owners (8%).

A8. Organisations in the investment value chain such as investor associations, sell side research, standard-setters and framework providers, and academics made up the remaining block of bilateral (18%) and roundtable engagements (18%).

A9. The staff intentionally reached out to individuals that held positions related to the investment decision making process. For example, the staff primarily sought feedback from portfolio managers, sell-side analysts, ESG research analysts, financial analysts, credit analysts, investment risk managers and stewardship teams when engaging with investors. The staff also solicited feedback from others including subject matter experts, academics and standard setters but only when their expertise was relevant to the investor interest in BEES-related risks and opportunities.

A10. Chart 1 shows the distribution of investor bilateral engagements by type of organisation and geographic region. Chart 2 shows information on roundtables.[23]

[23] Organisations labelled ‘global’ in the charts are organisations in the investment value chain with global memberships or footprints and are not investors themselves.

Chart 1 – BEES Research Project, Phase 1: Bilateral Engagement

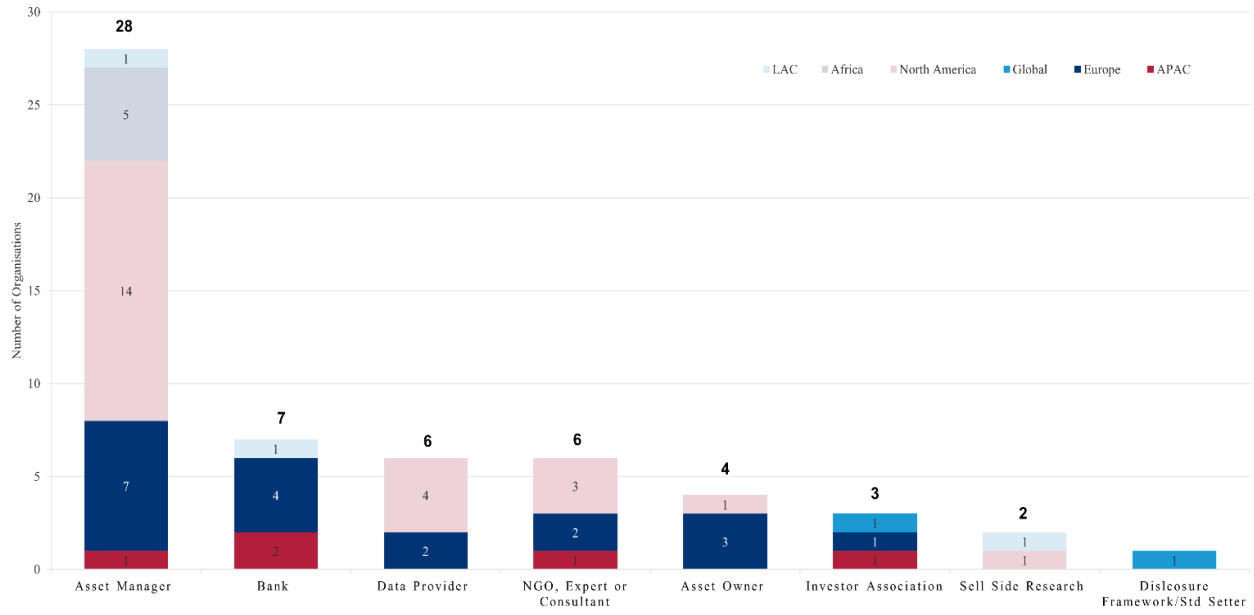
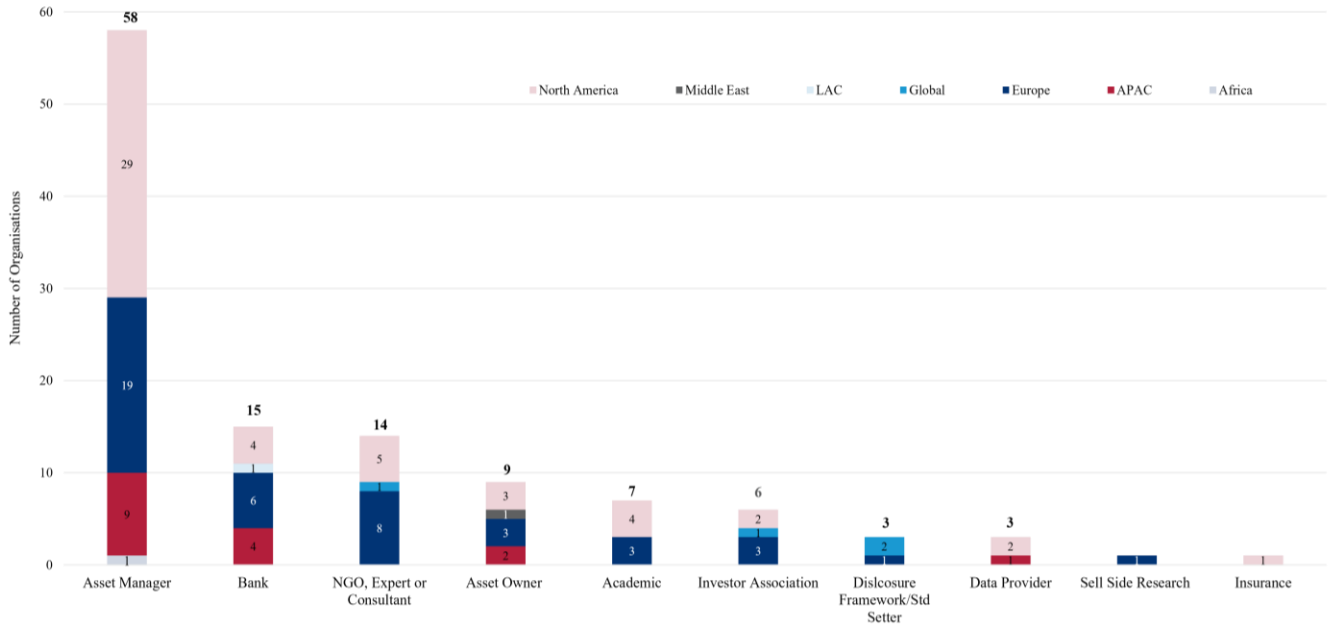


Chart 2 – BEES Research Project, Phase 1: Roundtable Engagement



A11. **Types of questions asked**. The staff intentionally posed broad and open-ended questions in Phase 1 of the research to obtain a broad range of views. As noted earlier, in future research, the staff has an opportunity to ask more specific questions and dive deeper into issues raised by investors, as appropriate to support the ISSB's decision making.

A12. The engagements covered four categories of questions:

(a) the level and drivers of investor interest in BEES-related risks and opportunities.

(b) the type and sources of information currently used by investors.

(c) how investors use information in their investment decision-making processes.

(d) the information challenges, barriers or gaps faced by investors, including what information investors are interested in to strengthen their investment decisions.

A13. For example, the engagements included such questions as:

(a) Which BEES-related themes or topics do you consider? Which industries or sectors do you consider? Which geographies?

(b) What sources of information (entity reports, third-party data providers, public sources) do you use? What disclosure standards and frameworks are entities adopting and are they useful to investors' information needs?

(c) Does information availability or quality vary by sector, geography, or market?

(d) How do you use the information you mentioned in your investment decisions? What techniques do you use (e.g., screening, integration, fundamental analysis, quantitative analysis, thematic analysis)? How else are you using the information?

(e) What challenges or barriers are you experiencing in trying to incorporate information on BEES-related risks and opportunities into your investment process? Do these challenges vary between developed and emerging markets?

A14. What are the most critical information gaps that you would like to see filled?

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