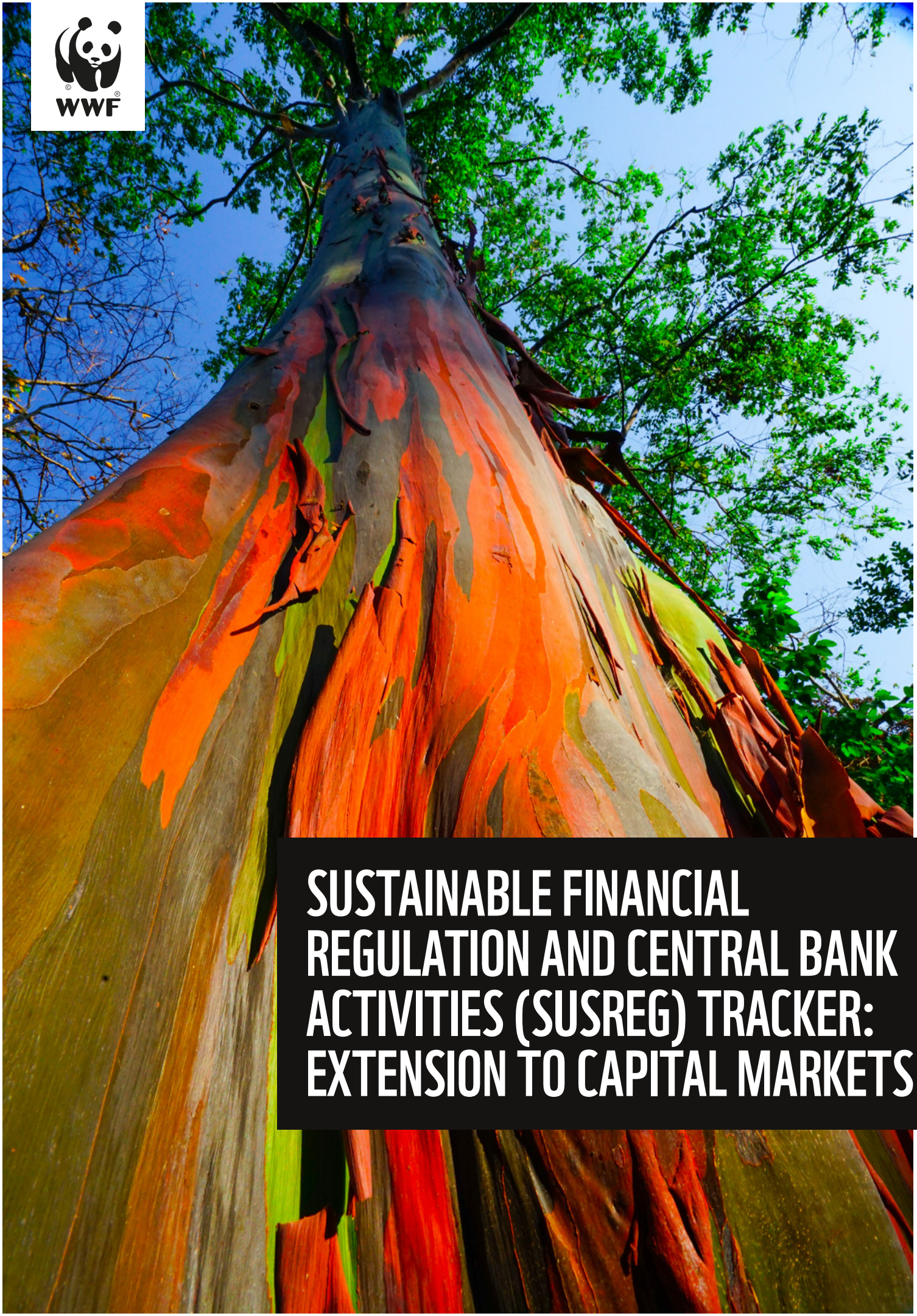

SUSTAINABLE FINANCIAL REGULATION AND CENTRAL BANK ACTIVITIES (SUSREG) TRACKER: EXTENSION TO CAPITAL MARKETS

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Eucalyptus deglupta planted in Thailand. Shutterstock

WWF is one of the world's most respected and experienced conservation organizations, with over 5 million supporters and a global network active in more than 100 countries. WWF's mission is to stop the degradation of the planet's natural environment and to build a future in which people live in harmony with nature. WWF has worked with the finance sector for more than a decade via innovative collaborations that seek to integrate ESG risks and opportunities into mainstream finance, to redirect financial flows in support of the global sustainable development agenda. Through its Greening Financial Regulation Initiative (GFRI), WWF engages specifically with central banks, financial supervisors as well as insurance regulators on the need to fully integrate climate and environmental risks into mandates and operations. The GFRI tracks regularly how central banks and supervisors are making progress via its SUSREG tool. It also undertakes research, capitalizing on in-house expertise and external partners, and offers targeted assistance, trainings and workshops to individual financial supervisors, central banks and policy makers using scientifically based data, tools and methodologies.

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Elkhorn coral. Image: Shutterstock

01: INTRODUCTION

Polymitas pictas snail, endangered endemic species, Baracoa, Cuba. Image: Shutterstock

1.1. THE CURRENT STATE OF CLIMATE AND NATURE

A decade after the Paris Agreement was adopted in 2015, the planet is recorded to be far from achieving the agreed target. The UNEP Emissions Gap Report 2024 highlighted that global greenhouse gas emissions reached a new record of 57.1 $GtCO_2e$ in 2023, marking a 1.3% increase from 2022 levels.[1] An early review of 2023 data by NASA scientists reveals that the amount of carbon dioxide in the atmosphere has increased from about 278 parts per million in 1750 (pre-industrial times) to 420 parts per million in 2023.[2] Even more alarmingly, 2024 was recorded as the warmest year on record, with global temperatures already rising approximately 1.55°C above pre-industrial levels.[3]

As of early 2025, global warming remains an existential concern. A quick calculation from the European Union's Copernicus revealed January 2025 as the warmest January globally, with a temperature of 1.75°C above pre-industrial levels.[4] Although the detailed data for this year is still emerging, past trends indicate that if mitigation efforts are not strengthened, the effects of climate change will worsen. Following this, AI models projected that the temperature would surpass the critical threshold of 1.5°C by the early 2030s regardless of emission reductions.[5] If emissions continue, there is a high likelihood that global warming will cross the 2°C target by 2050.

Rising global temperatures are further fueling more frequent and severe natural disasters such as wildfires, droughts, and storms. The year 2024 recorded global economic losses from natural disasters amounting to USD 320 billion, a sharp increase from USD 268 billion in 2023. This marks one of the costliest years on record, with insured losses amounting to USD 140 billion, the third-highest figure ever recorded.[6] The impacts were observed across all regions globally. The Americas experienced widespread damage primarily due to storms and tropical cyclones, while central Europe, Brazil, and China were significantly affected by severe flooding.

The impact of rising temperatures on natural disasters is currently extending beyond immediate destruction, triggering long-term environmental and socio-economic consequences. Biodiversity loss, for example, is occurring at an equally alarming pace as climate change, and it is estimated that species are becoming extinct at a rate 1,000 to 10,000 times higher than the natural background rate due to human activities.[7] The Living Planet Report 2024 also revealed that monitored populations of vertebrate species have declined by an average of 73% since 1970, with freshwater populations suffering the heaviest declines (85%), followed by terrestrial (69%) and marine populations (56%). Habitat destruction, overexploitation of natural resources, pollution, invasive species introduction, and climate change are the primary drivers of this decline.[8]

Seeing the urgent need for action, countries around the world made an important promise called the Kunming-Montreal Global Biodiversity Framework (GBF) during COP15 in December 2022. This framework aims to tackle the growing biodiversity crisis globally, with a plan to meet 23 targets by 2030 and 4 goals by 2050. It includes a system for tracking progress, better ways to plan and report on actions taken, the funding needed to carry out these plans, strategies for building skills and cooperation, and an agreement on sharing digital information about genetic resources. In pursuit of these objectives, all Parties under signatories are required to submit their National Biodiversity Strategies and Action Plans (NBSAPs) to reflect their commitment. However, as COP16 was held at the end of 2024, only 44 countries out of 196 members in the GBF submitted their NBSAPs as a policy document.[9]

The materiality of climate- and nature-related risks has become a top priority for all economic actors, including businesses, financial institutions, and investors, with studies estimating a total climate value-at-risk (CVaR) for global assets amounting to USD 2.5 Trillion.[10] Physical risks from climate change and biodiversity loss will pose direct threats to operations and infrastructure and affect industry supply chains. Transition risks are equally significant as the world is shifting toward a low-carbon and nature-positive economy, and regulatory changes, technological advancements, and evolving market dynamics may disrupt existing business models. Failure to assess and manage the business's material climate and nature risks may ultimately undermine investors' confidence and hinder long-term economic growth, with an estimated net cost of climate change inaction reaching 11% to 27% of the total cumulative GDP.[11]

Gould finch. Image: Gemaibarra Adobe Stock

1.2. THE SIGNIFICANCE OF CAPITAL MARKETS

As of 2025, the global capital markets continue to expand and encompasses a vast array of assets, including equities, bonds, and other financial instruments such as derivatives. The global listed equity market alone achieved USD 124 trillion in 2025,[12,13] while fixed income markets and outstanding bonds accounted for more than USD 140 trillion in 2023.[14] A significant amount of these instruments is managed by asset managers, who are projected to manage up to USD 145.4 trillion in Assets under Management (AuM) in 2025.[15] These numbers illustrate that listed markets represent a substantial share of global capital and are therefore highly influential.

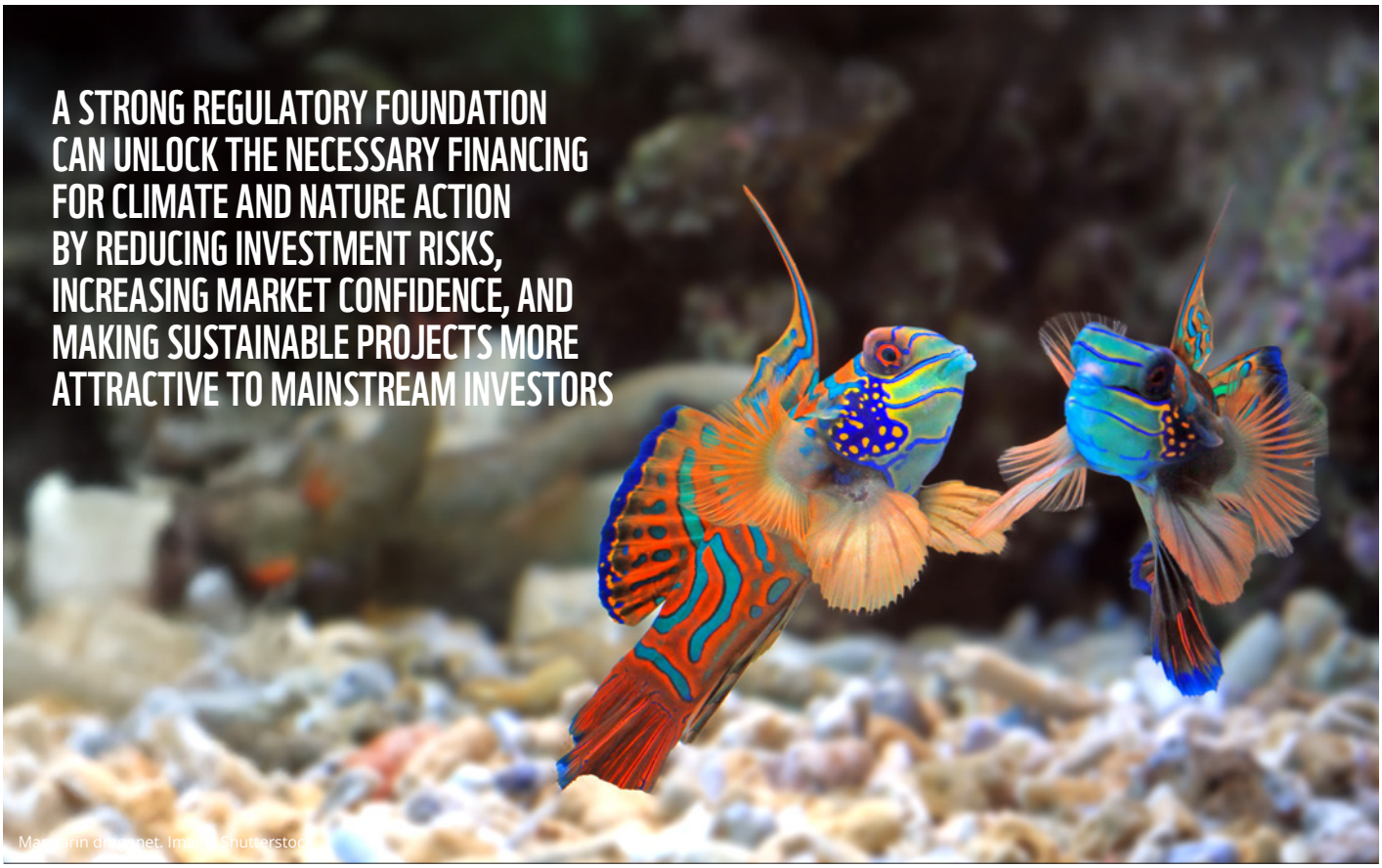
While global financial markets represent hundreds of trillions of US dollars in capital, the flow of green finance remains relatively limited. For instance, in 2024, global clean energy investment stood at a mere USD 2 trillion, with the majority of this heavily concentrated in China, United States, and European Union (EU).[16] The number is still far from the target of transitioning to a net-zero economy, which requires over USD 4.5 trillion in clean energy investment each year.[17] Looking at the bigger picture of the climate financing landscape, annual climate investment needs are projected to reach between USD 6.3 and 6.7 trillion if we are to achieve carbon neutrality by 2050.[18]

However, the urgent need to scale up climate and nature investments is hampered by the fact that capital markets continue to channel funding to environmentally harmful activities, including deforestation, fossil fuel extraction, and other industries that contribute to climate change and biodiversity loss. The UNEP State of Finance for Nature 2023 estimated that almost USD 7 trillion per year will be channeled to activities with a direct negative impact on nature.[19] As a result, financial flows remain misaligned with global climate and biodiversity goals.

Closing this investment gap will require well-regulated capital markets that actively incentivizes the flow of funds toward sustainable projects. Capital markets regulators can direct money toward projects or companies that aim for both net-zero and nature-positive goals by requiring climate and nature-related financial reports, including sustainability factors in investment choices, and encouraging green bonds and other sustainable finance instruments. To assist investors and asset owners in making well-informed decisions about the allocation of their resources, there is also an urgent need for increased transparency regarding the environmental effects of operations. Thus, a strong regulatory foundation can unlock the necessary financing for climate and nature action by reducing investment risks, increasing market confidence, and making sustainable projects more attractive to mainstream investors.

Building on this urgency, SUSREG will expand its assessment this year to include the capital markets. The framework will cover key areas, including asset management, bonds labeled as green, social, and sustainable, corporate disclosure for listed companies, and select market infrastructures.

A STRONG REGULATORY FOUNDATION CAN UNLOCK THE NECESSARY FINANCING FOR CLIMATE AND NATURE ACTION BY REDUCING INVESTMENT RISKS, INCREASING MARKET CONFIDENCE, AND MAKING SUSTAINABLE PROJECTS MORE ATTRACTIVE TO MAINSTREAM INVESTORS



Mandarin dragonet. Image: Shutterstock

02: THE ROLE OF REGULATION AND SUPERVISION IN CAPITAL MARKETS

Blakiston's Fish Owl, Bubo blakistoni. Image: AGAMI Adobe Stock

ADAPTING REGULATORY FRAMEWORKS TO ADDRESS EMERGING SUSTAINABILITY CHALLENGES

As markets continue to evolve in response to changes in climate and environmental issues, the regulatory and supervisory framework that governs the capital markets must adapt to address these emerging priorities.

A growing body of research shows that climate- and nature-related risks can materially impact asset valuations, capital allocation, and overall market stability. In fact, according to the IPCC, many public and private investors feel that the current policy signal is insufficient to prompt them to adjust their investment portfolios in line with climate objectives.[20] Such sentiment further reinforces the need for enhanced regulatory supervision in this sector,[21] as adequate regulations and market supervision are needed to address environmental and social aspects and their impacts on financial performance and long-term business viability.

On top of this, capital markets have long faced challenges related to asymmetric information, including fraud and market manipulation, which can distort investment flows and undermine market integrity. In the context of sustainability, the lack of transparent, reliable data on climate- and nature-related risks and impacts exacerbates these issues, which may lead to greenwashing and mispricing of assets. To build a resilient and sustainable financial system with high integrity, regulators must enhance its supervision and ensure that sustainability-related risks are effectively integrated into various capital markets segments. The following are the key aspects within capital markets that will need significant reform and become the base of the SUSREG capital markets framework.

TO BUILD A RESILIENT AND SUSTAINABLE FINANCIAL SYSTEM WITH HIGH INTEGRITY, REGULATORS MUST ENHANCE ITS SUPERVISION AND ENSURE THAT SUSTAINABILITY-RELATED RISKS ARE EFFECTIVELY INTEGRATED INTO VARIOUS CAPITAL MARKETS SEGMENTS

Adult male Ambilobe Panther Chameleon (Furcifer pardalis). Image: Shutterstock

2.1. ASSET MANAGEMENT

Weaver Ants (Oecophylla smaragdina). Image: Shutterstock

Asset owners play a crucial role in driving sustainability within the financial ecosystem. Their investment strategies and decisions can significantly influence the behavior of corporations and markets towards sustainable practices. According to Morningstar's "Voice of the Asset Owner Survey 2024,[22] more than two- thirds of asset owners globally believe that ESG has increasingly become more and more relevant to their investment process compared to five years ago. The analysis also indicated that every asset owner surveyed is allocating at least a portion of their assets to strategies that take ESG factors into account, with climate transition remaining at the top of the most material environmental factors, together with social and governance factors such as labor practices and business conduct.

Similarly, asset managers hold a unique and influential position within the financial system. Their role as an acting manager of the shareholders allows them to influence corporate behavior through financial decision-making processes such as stock selection, monitoring, engagement, and proxy voting. Through their engagement with the invested companies and their voting rights, asset managers can encourage businesses to adopt science-based sustainability practices that align with global climate and environmental goals.

To date, a growing number of asset managers worldwide have recognized the critical importance of integrating environmental, social, and governance (ESG) into their core operations. Global ESG-based assets were reported to exceed USD 30 trillion in 2022 and are on track to surpass USD 40 trillion by 2030 in terms of Assets under Management (AUM).[23] From the demand side, it is reported in a survey that most investors (60%) are seeing higher yields in their ESG assets compared to non-ESG equivalents. As a result, more than 78% of them are willing to pay more fees for investing in ESG funds.[24]

A voluntary and industry-led organization, the Net Zero Asset Managers initiative, was launched as an umbrella for 30 asset managers managing a total of USD 9 trillion AUM. Since its inception in December 2020, the initiative has grown to more than 325 signatories and over $57 trillion in AUM by early 2025. After joining the campaign, in 2024 it is reported that signatories have been showing progress, especially in aligning their investment practices with the 1.5°C target and helping global efforts to achieve net zero greenhouse gas emissions by 2050 or sooner.[25] More than half (51%) of the signatories that share their methods use the Net Zero Investment Framework (NZIF), 22% follow the Science Based Targets initiative for Financial Institutions (SBTi), and 5% apply the Net Zero Asset Owner Alliance Target Setting Protocol (NZOA).

While the growth may appear promising, transparency in the reporting of measurable impacts is preferred by institutional clients and asset owners over vague commitments.[26] Having clear and consistent rules will make sure that funds advertised as sustainable actually meet certain environmental and social standards, which will boost confidence and trust that the investments will match what investors care about and provide real results.

Regulations that govern the conduct of asset managers in their sustainability practice are crucial to provide a structured framework for identifying, assessing, managing, and monitoring climate- and nature-related risks. Generally, the framework will require asset managers to integrate climate risk considerations into their overall risk management processes covering aspects related to governance, strategy, metrics & targets, disclosure requirements, policies, and procedures. The Monetary Authority of Singapore (MAS) was among the pioneering regulators, particularly in Asia, to release specific guidelines on environmental risk management for asset managers.[27] On the other hand, when it comes to product transparency and ESG integration into portfolios, the European Union was among the first major jurisdictions to introduce a comprehensive product-level transparency regime such as SFDR and mandate transparency on the integration of ESG risks into the investment process. However, global inconsistencies in current regulatory frameworks create challenges for asset managers operating across multiple jurisdictions and with products domiciled around the globe.

2.2. GREEN, SOCIAL, AND SUSTAINABLE (GSS) BONDS

The market for bonds labeled as green, social, or sustainable has experienced rapid growth over the past decade, with the total outstanding market value reaching approximately USD 2.9 trillion in 2025, a nearly sixfold increase since 2018.[28] Annual issuance is also projected to hit USD 1 trillion this year, with green bonds expected to dominate at around USD 620 billion, primarily financing climate mitigation and clean energy investments.[29]

Importantly, these bonds now represent a significant share of the global bond market. As of 2025, green, social, and sustainable (GSS) bonds account for more than 10% of total bond issuance globally. Meaning that one in every ten dollars raised in the bond market is directed toward projects with demonstrable environmental, social, or sustainability benefits. In some markets, this share is even higher. For example, in the European Union, ESG bond issuance made up 12.8% of total bond issuance in 2024, comprising 9.9% green bonds, 1.8% social bonds, 1.1% sustainable bonds, and 0.1% sustainability-linked and transition bonds.[30]

Since the bonds are labelled as green, social and sustainable, their issuance requires careful evaluation to ensure alignment with established principles and investors' expectations. Even though many countries have set up rules and frameworks for sustainable bonds, proper regulation needs to go further than just having optional guidelines; it must require bond issuers to stick to a specific labelling system both when they issue the bonds and throughout the time the bonds are sold.

Regulators need to make sure that issuers follow a national or regional green and social bond framework that aligns with the main principles and criteria set by recognized international market guidelines, like those from the International Capital Market Association (ICMA).[31] For bonds labelled as green, social, or sustainable, the current market practice includes four core principles related to disclosure on the use of proceeds, the process for project evaluation and selection, management of proceeds, and reporting. ICMA frameworks also encourage an external review process to ensure compliance with the principles and maintain the bonds' credibility.

One of the key aspects of green, social and sustainable bond issuance is the disclosure of how the proceeds are used. Issuers are expected to provide detailed reporting on the allocation of funds to eligible green or social projects, including information on each project's scope, objectives, and anticipated environmental or social impact. Increasingly, best practice is moving towards aligning these disclosures with taxonomy-based standards, such as the EU Taxonomy or similar frameworks, which help define what qualifies as a green or socially beneficial activity. These standards not only improve the credibility and comparability of reported information but also enhance transparency for investors. Regular updates on fund allocation remain essential to maintaining investor trust and ensuring accountability.

WWF has previously published "Can debt capital markets save the planet?" which highlights the disconnect between net-zero pledges by major international banks and the continued 'business-as-usual' practices of their investment banking arms, particularly in arranging or underwriting bond deals with significant environmental impacts. The report also provides a comparative overview of good practice standards and international guidance in the debt capital markets, offering insights into how the market can more effectively support climate and nature goals.[32]

In addition to the disclosure on use of proceeds, impact reporting is an equally necessary and key aspect that has its foundation in disclosing the actual environmental and social impacts achieved through the funded projects. With regard to the impact report, issuers should provide disclosure on key metrics and performance indicators of expected environmental or social impacts, for example reductions in greenhouse gas emissions or improvements in energy efficiency. On this front, regulators could contribute by developing standardized metrics for impact reporting, ensuring a more harmonious reporting process.

Furthermore, as the market becomes increasingly global, the supervision of third-party reviewers, particularly those based in other jurisdictions, is gaining relevance. The EU, for instance, has introduced a thoughtful approach in its European Green Bond framework, allowing issuers to engage third-country external reviewers through a structured regime based on equivalence assessment, recognition, or endorsement. In cases where an equivalence decision is absent, the framework outlines a process for ESMA to recognize external reviewers established outside the Union, facilitating international participation while upholding review quality and integrity.[33]

The SUSREG capital markets framework will focus only on green, social, and sustainable bonds, given their significant share of the global market and adherence to more rigorous frameworks. Sustainability-linked bonds, on the other hand, constitute a relatively minor segment and do not follow the stringent guidelines that govern green, social, and sustainable bonds. Unlike green, social and sustainable bonds, which have proceeds earmarked for specific environmental or social projects, sustainability-linked bonds are performance-based, with financial and structural characteristics tied to the issuer's achievement of predefined sustainability targets. As a result, there is a less rigorous framework for ensuring direct impact, which makes sustainability-linked bonds less suitable for a focused evaluation framework. Concentrating the framework on green, social, and sustainable bonds will therefore ensure a more impactful and comprehensive evaluation of investments that directly contribute to environmental and social benefits.

2.3. CORPORATE REPORTING FOR LISTED COMPANIES

The stock market represents a significant component of the capital markets by serving as an exchange platform for publicly listed companies to raise equity and for investors to buy and sell ownership stakes. In this market, stock issuers should maintain their accountability by regularly publishing specific corporate disclosure requirements, including activities to promote sustainability matters. In a recent study, MSCI estimated based on data through 2023, Scope 1 GHG emissions of the world's listed companies represent nearly one-fifth of the global GHG emissions.[34]

Building on this concerning trend, a growing global initiative advocates for enhanced disclosure frameworks to assist companies in assessing and reporting their climate- and nature-related risks and opportunities. Notable frameworks include the Global Reporting Initiative (GRI), the Task Force on Climate-related Financial Disclosures (TCFD), the Taskforce on Nature-related Financial Disclosures (TNFD), and the International Sustainability Standards Board (ISSB). Furthermore, companies are also increasingly urged to establish targets that align with the latest climate and nature science, ideally verified through frameworks like the Science Based Targets Initiative (SBTi)[35] for climate and the Science-Based Target Network (SBTN) which currently cover sectors like freshwater, ocean, land, and biodiversity.[36]

The landscape of regulatory climate disclosure requirements varies across various jurisdictions. A notable disclosure requirement is the European Union's Corporate Sustainability Reporting Directive (CSRD), mandating companies operating within EU jurisdictions to report on their sustainability starting in 2025. The directive applies to a broader range of companies, including both large publicly listed and non-listed entities and listed small and medium-sized enterprises (SMEs) within the EU. It also requires companies to publish a complete disclosure of Scope 1, 2, and 3 GHG emissions. CSRD initially applied to more than 50,000 companies in the EU, but the recent Omnibus proposal, which was introduced in February 2025, might reduce the scope of applicability only to companies with more than 1,000 employees and either a balance sheet total of more than EUR 25 million or a turnover above EUR 50 million.[37]

A key feature of the CSRD is the inclusion of a double materiality approach, which requires companies to disclose how sustainability factors impact their financial performance (financial materiality) as well as how their operations effect the environment and society (impact materiality). CSRD also establishes a set of European Sustainability Reporting Standards (ESRS) comprising two general cross-cutting reporting standards and ten topical standards covering different aspects of sustainability, such as climate change, biodiversity, pollution, own workforce, and business conduct.

Meanwhile, regulatory developments in the United States have taken a different turn. In March 2025, the U.S. Securities and Exchange Commission (SEC) announced that it would no longer defend its climate disclosure rules in court, effectively stepping back from implementing the regulation without formally rescinding it. The rule, originally finalized in March 2024, required companies to report on climate-related risks and GHG emissions. However, it faced immediate legal challenges, including nine court petitions filed within ten days of its release. These included a lawsuit led by 25 Republican state attorneys general, spearheaded by Iowa AG Brenna Bird, and a motion by the U.S. Chamber of Commerce seeking a stay on the regulation through a federal appeals court.[38]

These diverging regulatory approaches highlight the broader challenge of ensuring consistency and ambition in climate-related disclosures globally. Despite the growing industry awareness and the establishment of national-level regulations requiring companies to publish climate and nature disclosures, meaningful alignment with global climate goals remains limited. Recent analysis by the MSCI Sustainability Institute finds that, while 24% of listed companies have SBTi-approved or committed climate targets, only 11% are currently aligned with a 1.5°C pathway.[39] This data illustrates that, even if climate targets have been set, many companies' targets remain insufficient to meet the internationally agreed goal of limiting global warming to the 1.5°C scenario.

Several barriers prevent companies from aligning with the Science Based Targets initiative (SBTi), making the adoption of science-based climate targets difficult. Misinterpretation of climate science frequently leads to ineffective emission reduction strategies, but at the same time, using universal rulesets rather than sector-specific guidelines often leads to ignoring the distinct challenges and emission reduction requirements that different sectors face. Furthermore, companies in developing countries face additional challenges due to the economic, regulatory, and infrastructure conditions they are exposed to that are significantly different from those in developed countries. These factors, collectively, present even more significant challenges for these companies to attempt setting a credible climate target and aligning their operations to it.[40,41]

However, these challenges have not gone unnoticed, and in March 2025, the SBTi launched a new draft Corporate Net-Zero Standard V2 for public consultation, which aims at addressing such these challenges and at facilitating the adoption of climate science targets.

On climate-related disclosures, in 2024, IFRS reported that 82% of public companies already disclosed information aligned with at least one TCFD recommendation, but only 2–3% fully adhered to all 11 recommendations outlined by TCFD.[42]
For nature-related disclosures, a report based on a limited survey conducted in the Americas revealed that the average alignment score was only 19%, indicating that most companies are still only partially aligned with the TNFD framework.[43]
The number indicates significant room for improvement in corporate reporting practices and the need for more regulatory pressure in both climate and nature reporting.

2.4. MARKET INFRASTRUCTURE

CARBON MARKETS

A carbon market is one of the proposed solutions to facilitate companies in transitioning to a low-carbon economy. This system was created to help companies that produce more greenhouse gases (GHG) than are allowed to buy carbon credits from those who have extras or from approved carbon credit projects.

There are two primary models through which carbon markets operate: compliance markets and voluntary markets. A clear emissions cap that gradually decreases over time is established by an effective emissions trading system (ETS), which allows us to ensure that GHG emissions are continuously reduced in a progressive manner. In contrast, voluntary markets are unregulated systems in which organizations voluntarily offset their emissions by purchasing carbon credits from certified projects, such as renewable energy initiatives or reforestation. These markets offer companies greater flexibility; however, issues may arise with regard to their transparency and the quality of the projects available on the market.

One of the most established carbon markets is the European Union Emissions Trading System (EU ETS),[44] a cap-and-trade scheme in which companies receive emission allowances that are largely auctioned. The EU ETS has contributed to a 47% reduction in emissions from 2005 to 2023.[45] The decrease was primarily attributed to the decarbonization of power and industrial plants; however, the market also notably faced a negative backlash as the EU continued to provide free carbon allowances to high-emitting sectors, including cement, steel, and chemicals. The carbon allowance giveaway was reportedly greater than the industry's actual emissions, which led to a loss of the intended economic incentives to reduce emissions.

To ensure that voluntary carbon markets (VCM) achieve the intended outcomes, the market must operate under a clear regulatory framework aligned with international standards. Internationally recognized standards, such as the Gold Standard and Verified Carbon Standard (VCS), should serve as the basis for issuing carbon credits, along with clear methodologies for quantification, verification, and tracking. A robust infrastructure should be in place, including registries and monitoring, reporting, and verification (MRV) systems to prevent double counting and ensure credibility.

ESG INDICES AND RATINGS

ESG indices are a critical tool for investors as they facilitate the development of investment products with sustainability-focused characteristics. Different regions have developed ESG indices to reflect local regulatory environments and investment preferences. For example, the MSCI ESG Leaders Index and the FTSE4Good Index are widely used in Europe and globally as they incorporate stringent sustainability criteria to assess companies based on their environmental and social impact. In the United States, the S&P 500 ESG Index offers a modified version of the traditional S&P 500 by excluding companies with low ESG scores. Hong Kong's Hang Seng Corporate Sustainability Index and Japan's JPX-Nikkei 400 ESG Index are among the well-known benchmarks in the Asian market. In Latin America, Brazil's B3 Corporate Sustainability Index (ISE B3) is introduced as the benchmark for ethical investing.

On top of indices, ESG ratings complement the investors' need to evaluate and choose the best-performing sustainable companies for their investment basket. However, it is essential to acknowledge that each ESG rating provider adopts very distinct methodologies, resulting in significant variations in scores for the same company.

Mangroves, Walakiri Beach Sumba Island Indonesia. Image: AGAMI Adobe Stock

Table 1 compares major ESG rating providers, highlighting their methodologies, scoring systems, and focus areas.

TABLE 1. COMPARISON OF SELECT ESG RATING PROVIDER

Rating agency	Score (highest to lowest)	Methodology	Source	Coverage
MSCI ESG Ratings[46]	AAA (leader) to CCC (laggard)	▪ Calculate Weighted Average Key Issue Score. ▪ Normalize to Industry-Adjusted Score. ▪ Conduct additional committee review process in pre-defined cases. ▪ Map to final ESG Rating (AAA–CCC).	Company financial and sustainability disclosures, specialized government and academic data sets, media searches, etc.	As of June 2024, it covers 17,000 issuers and 999,000 securities worldwide.
LSEG ESG Score (Previously Refinitiv)[47]	0 to 25, First Quartile, poor relative ESG performance and insufficient degree of transparency in reporting material ESG data publicly. > 25 to 50, Second Quartile, satisfactory relative ESG performance and moderate degree of transparency in reporting material ESG data publicly. > 50 to 75, Third Quartile, good relative ESG performance and above average degree of transparency in reporting material ESG data publicly. > 75 to 100, Fourth Quartile, excellent relative ESG performance and high degree of transparency in reporting material ESG data publicly.	▪ The scores are measured through three pillars: environmental, social, and corporate governance. ▪ Final score is calculated as a weighted average of category scores. ▪ The weights for the environmental and social categories will change depending on the industry.	Annual report, NGO websites, CSR report, company websites, stock exchange filings, news sources.	ESG scores and metrics are available for circa 14,500 public entities with time series from 2002. ESG metrics are available for 1,300 private companies globally.
Morningstar Sustainalytics ESG Risk Ratings[48]	0-10: Negligible 10-20: Low 20-30: Medium 30-40: High 40+: Severe	The ESG Risk Ratings are composed by the following three building blocks that contribute to a company's overall rating score: ▪ Material ESG Issues,; ▪ Corporate Governance & Stakeholder Governance, and; ▪ Systemic ESG Issues & Idiosyncratic Issues.	Company and non-company sources, including company reports and various public third-party sources, and invites companies to validate/update this data.	Global coverage of more than 16,000 companies including public and private companies and fixed-income issuers.
S&P Global ESG Score[49]	0 (minimum) – 100 (maximum)	▪ Question-level scoring based on company disclosure. ▪ Question-level scoring based on modeling where disclosure is absent. ▪ Weighted aggregation from question to criteria, dimension and overall ESG Score.	Public sources.	Over 13,000 companies globally.

Growing controversies have indeed emerged due to discrepancies between ESG scores from different providers, further affecting the credibility and comparability of ESG indices. For example, in July 2023, Chevron Corp received conflicting ESG ratings from different providers. Sustainalytics classified it as a high ESG risk (the second-worst category out of five), while MSCI assigned it an "A" rating (the third-best category out of seven).[50] Another more recent example, as of November 2025, ExxonMobil holds varying ESG ratings across different providers. Sustainalytics classifies ExxonMobil as a "severe risk" reflecting significant ESG vulnerabilities with a score of 45.07. Meanwhile, LSEG rates ExxonMobil at 61 out of 100, suggesting good relative ESG performance and above average degree of transparency in reporting material ESG data publicly. Such differences arise from variations in weighting criteria (e.g., emphasis on environmental, social, and governance factors), data sources (corporate disclosures vs. third-party reports), and industry-specific benchmarks. These inconsistencies pose challenges for investors relying solely on ESG ratings to assess companies.

Hence, regulations and minimum standards must be in place to govern the creation of sustainability indexes and ratings to ensure transparency, accountability, and comparability in rating methodologies, appropriate governance structures, and freedom from conflict of interest. The European Union has been one of the first jurisdictions to introduce a dedicated regulatory framework for ESG rating providers, with ESMA designated as the supervisor.[51] ESG rating providers operating in the EU must comply with a transparency requirement on the methodology and sources of information used to calculate the given ESG rating. Rating providers outside the EU must either obtain an endorsement from an EU-authorized entity or be included in the EU registry based on an equivalence decision.

ANTI GREENWASHING REGULATIONS AND MONITORING

Another key aspect of the capital markets regulation is to take serious action pertaining to the risks of greenwashing. Greenwashing cases have increased, with companies and asset managers facing accountability for their sustainability claims. Regulators and supervisory bodies must have a mechanism in place to ensure that claims on sustainability practices and labels are credible.

A notable example of regulatory action against greenwashing is the case of DWS, the asset management arm of Deutsche Bank. The company has faced multiple penalties for making misleading statements about its environmental, social, and governance (ESG) investing practices. In September 2023, the US Securities and Exchange Commission (SEC) imposed a total fine of USD 25 million.[52] In April 2025, German prosecutors also concluded a lengthy investigation, issuing a €25 million (approximately USD 27 million) fine after finding that DWS had misrepresented its ESG credentials.[53] While the firm publicly claimed to be a "leader" in ESG and positioned ESG as core to its investment DNA, authorities determined these claims "did not correspond to reality," with misleading disclosures spanning from mid-2020 to the end of January 2023. These actions highlight the importance of robust supervision and the need for sustainability claims to be credible and verifiable under regulatory scrutiny.

Glasswinged Butterfly. Image: Nicolas Delafraye

03.
SUSREG CAPITAL MARKETS FRAMEWORK

Wild bees honeycomb on a banana tree . Image: Shutterstock

rare Haleakalā silversword in full bloom. Image: Shutterstock

3.1. OVERVIEW OF SUSREG FRAMEWORK

The Sustainable Regulations and Central Bank Activities ('SUSREG') framework provides practical guidance on the integration of environmental & social (E&S) considerations in the financial market. Its main objective is to strengthen and harmonize regulatory, supervisory, and ultimately risk management and decision-making practices across key financial markets, in line with Sustainable Development Goals and international agreements.

The extension of the SUSREG framework to the capital markets has notably built on:

- An extensive review of the literature produced by leading universities, think-tanks and non-governmental organizations on capital markets regulatory and supervisory practices;
- Key frameworks such as the Task Force on Climate-related Financial Disclosures (TCFD), International Sustainability Standards Board (ISSB), and Task Force on Nature-related Financial Disclosures (TNFD).

This capital markets framework also benefited from comments and suggestions from experts from financial regulators, think tanks, universities, and other WWF partners, which are mentioned in the Acknowledgements section of this report.

The pilot assessment will initially cover 10 key countries, focusing primarily on markets that have significant global influence in terms of size, as well as those with a growing sustainable regulatory framework.

3.2. ASSESSMENT METHODOLOGY

In performing the assessments, WWF will consider the regulations and guidelines issued by the security exchange, financial regulators, or supervisors, as they pertain to sustainable capital markets practices.

Below are key considerations that will guide the country-level assessments performed against the framework:

- The assessment will only consider information that is publicly available, through official websites or in relevant news articles and publications;
- For countries where English is not an official language, WWF will endeavor to use official documentation available in the national language. If an official translation of the relevant documentation is not available, WWF may procure an unofficial translation to facilitate the assessment.
- For each indicator, WWF will review the available country-specific evidence. The assessment will result in full, partial, or no fulfillment, depending on whether relevant measures are in place and the extent to which they satisfy the indicator;
- For each indicator, the assessment results will also be split to clearly display the scope of the associated measure(s): either applicable to climate-related risks, environmental-related risks, social-related risks, or multiple risks.

The SUSREG framework and the upcoming assessment results can be used by:

Capital markets regulators and policymakers:

- To strengthen regulatory and supervisory practices by integrating environmental and social (E&S) considerations;
- To benchmark themselves against peers in key markets worldwide and align with good practices.

International financial standard-setters and initiatives:

- To benefit from independent, regularly updated assessments and annual reporting on progress;
- To build on the framework to establish roadmaps for integrating E&S considerations in global capital markets related regulations;
- To benefit from the science-based perspective of WWF on best practices regarding the integration of E&S risks in the capital markets sector.

Asset managers, asset owners, and companies:

- To understand the differences in the capital markets regulations in the countries in which they operate;
- To formulate their ESG strategy by taking into consideration other countries' best practices in capital markets regulations;
- To support and inform their engagement with government entities and policymakers.

Academics, think tanks, and other non-governmental organizations:

- To assess the degree of integration of various E&S issues in capital markets regulations and track progress.

Before the publication of final results, WWF will share preliminary results with the relevant institutions (e.g., security exchanges, financial supervisors, etc.) on a best-effort basis to seek feedback and ensure the information identified is complete and accurate.

Please note that we do not weigh individual indicators or assign a rating to the assessment. No overall final score or ranking of respective countries will be provided. Rather, the tool enables users to quickly identify good practices and potential areas for improvement and to understand how different national regulatory frameworks compare against specific indicators.

The SUSREG framework and assessment currently do not consider the extent to which specific regulations and measures are adequately and effectively implemented. Nevertheless, it is critical for capital markets regulators and supervisors to build the internal capacity to fully implement officially issued measures.

The detailed assessment results will be published on the SUSREG online platform (www. https://susreg.panda.org/), showing the country-level results for each indicator, together with the source of the information used. The following is the full list of indicators for the SUSREG capital markets framework.

3.3. SUSREG CAPITAL MARKETS INDICATORS

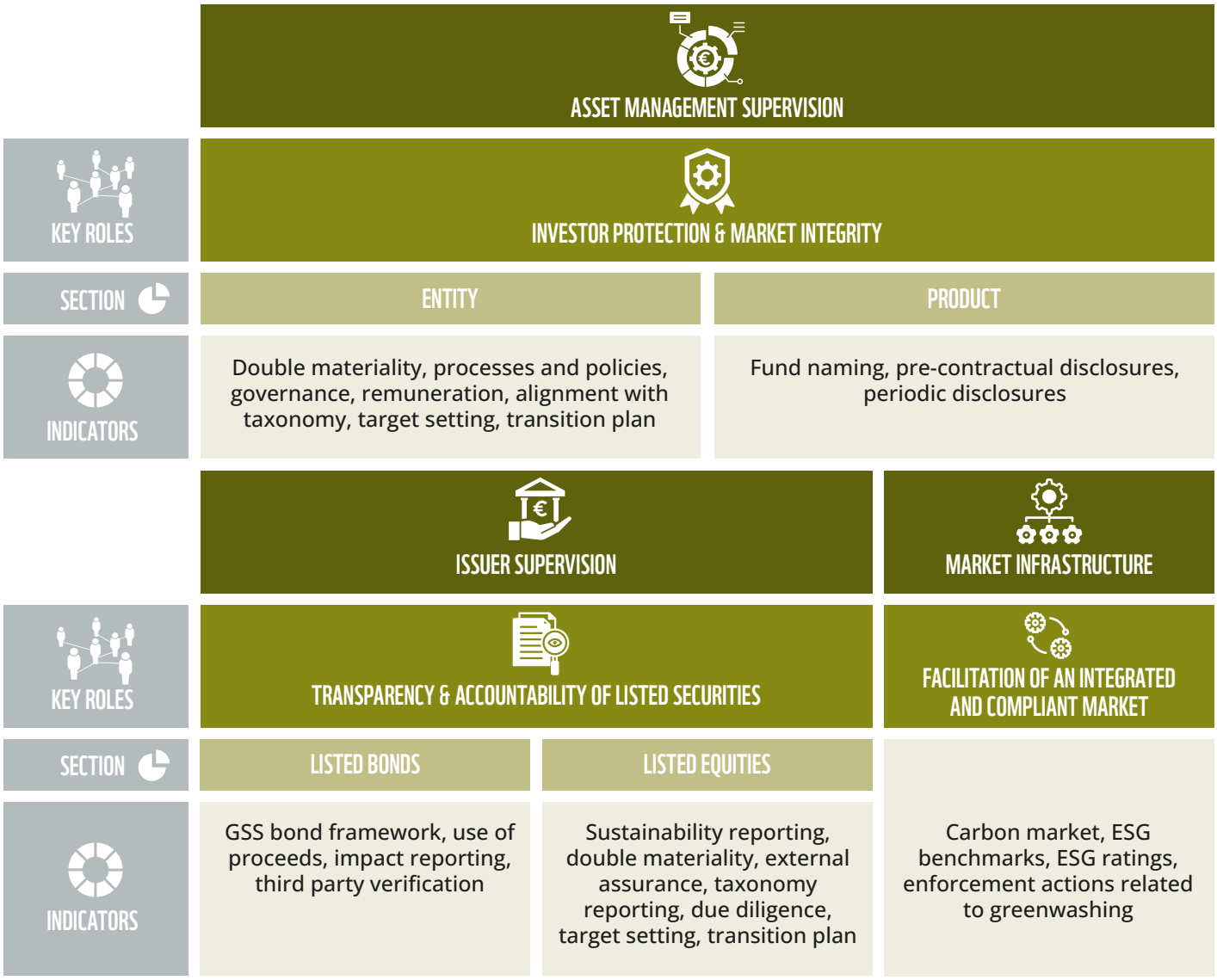


TABLE 2. INDICATORS FOR SUSREG CAPITAL MARKETS ASSESSMENT

ASSET MANAGEMENT SUPERVISION	
ENTITY	
1.1.1	Asset managers are expected to conduct a comprehensive assessment of double materiality, encompassing both financial materiality and impact materiality related to sustainability risks and impacts.
1.1.2	Asset managers are expected to integrate sustainability into all-investment related processes including but not limited to investment strategy and decisions making, risk management process, approaches of engagement and other relevant processes and policies such as fund compliance and monitoring.
1.1.3	Asset managers are expected to have proper governance in place with adequate roles, responsibilities, and capabilities to cover sustainability-related topics.
1.1.4	Asset managers are expected to integrate environmental and social considerations into their remuneration practices, including links to specific sustainability performance metrics.
1.1.5	Asset managers are expected to disclose the proportion of their total portfolio that is aligned with established classification systems for sustainable activities (taxonomy).
1.1.6	Asset managers are expected to set climate and nature science-based targets and keep up to date with the latest climate science, to align their portfolios with the objectives of the Paris Agreement and Kunming-Montreal Global Biodiversity Framework
1.1.7	Asset managers are expected to publicly disclose time-bound transition plans detailing how they will achieve their climate and nature-related targets.
PRODUCT	
1.2.1	Asset managers are expected to adhere to defined minimum thresholds for asset allocation in funds with sustainability-related names/labels including clear guidelines for investment selection and adherence to exclusion criteria.
1.2.2	Asset managers are expected to provide pre-contractual disclosures detailing the sustainability considerations of the fund, including the investment policy, sustainability objectives, criteria for asset selection, and key performance indicators (KPIs) used to measure progress towards the sustainability characteristics / objectives of the product.
1.2.3	Asset managers are expected to provide periodic disclosures detailing the sustainability considerations of the fund, including adherence to stated sustainability characteristics / objectives and the integration of E&S factors into investment decisions.
ISSUER SUPERVISION	
LISTED BONDS	
2.1.1	A mandatory green, social, and sustainable bond framework is in place for all bonds labelled as green, social, sustainable requiring strict adherence to key components such as the use of proceeds, project selection, management of proceeds, and reporting.
2.1.2	Green, social, and sustainable bond issuers are expected to disclose detailed information on the allocation of proceeds to eligible projects, including project descriptions and alignment with environmental & social objectives according to a pre-defined reporting template.
2.1.3	Green, social, and sustainable bond issuers are expected to disclose measurable environmental and social impacts achieved through funded projects, using specific Key Performance Indicators (KPIs).
2.1.4	Green, social, and sustainable bond issuers are expected to obtain independent third-party verification to ensure the accuracy and alignment of their use of proceeds and impact reporting with established sustainable bond standards.
LISTED EQUITIES	
2.2.1	Listed companies are expected to disclose relevant sustainability matters and make their sustainability reports publicly available in accordance with internationally recognized sustainability reporting standards and frameworks (e.g., TCFD, TNFD, ISSB, ESRS, etc).
2.2.2	Listed companies are expected to conduct a double materiality assessment to identify and report on their material sustainability impacts, risks, and opportunities, considering both how sustainability issues affect their financial performance and how their operations impact the environment and society.
2.2.3	Listed companies are expected to obtain independent external assurance for their sustainability reporting.
2.2.4	Listed companies are expected to publicly report their alignment with existing classification systems for sustainable and unsustainable activities (taxonomy), detailing the proportion of their revenue, capital expenditures, and operational expenses that meet the defined criteria for sustainability.
2.2.5	Listed companies are expected to conduct due diligence integrating processes to identify, prevent, mitigate, and address actual and potential environmental and social impacts across their own operations, subsidiaries, and value chains.
2.2.6	Listed companies are expected to set climate and nature science-based targets and keep up to date with the latest climate science, to align their portfolios with the objectives of the Paris Agreement and Kunming-Montreal Global Biodiversity Framework
2.2.7	Listed companies are expected to publicly disclose time-bound transition plans detailing how they will achieve their climate and nature-related targets.
INFRASTRUCTURE	
3.1.1	A regulated and transparent carbon market is operational, with mechanisms ensuring accessibility for companies of different sizes, supported by standardized credit systems and robust infrastructure.
3.1.2	The creation and methodology of sustainability-related benchmarks/indices are regulated by regulations or minimum standards governing climate and sustainability topics.
3.1.3	Regulations and minimum standards are established for ESG rating providers and the related rating activities, mandating transparency, accountability, and independence in rating methodologies, governance structures, and conflict-of-interest management.
3.1.4	Supervisors disclose their enforcement policy, findings and outcomes related to greenwashing or sustainability-related misconduct, including specific cases and measures taken to prevent future occurrences.

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Our Mission

Together, we protect the environment and create a future worth living for generations to come.

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Quetzal, Pharomachrus mocinno, Costa Rica Image: Shutterstock