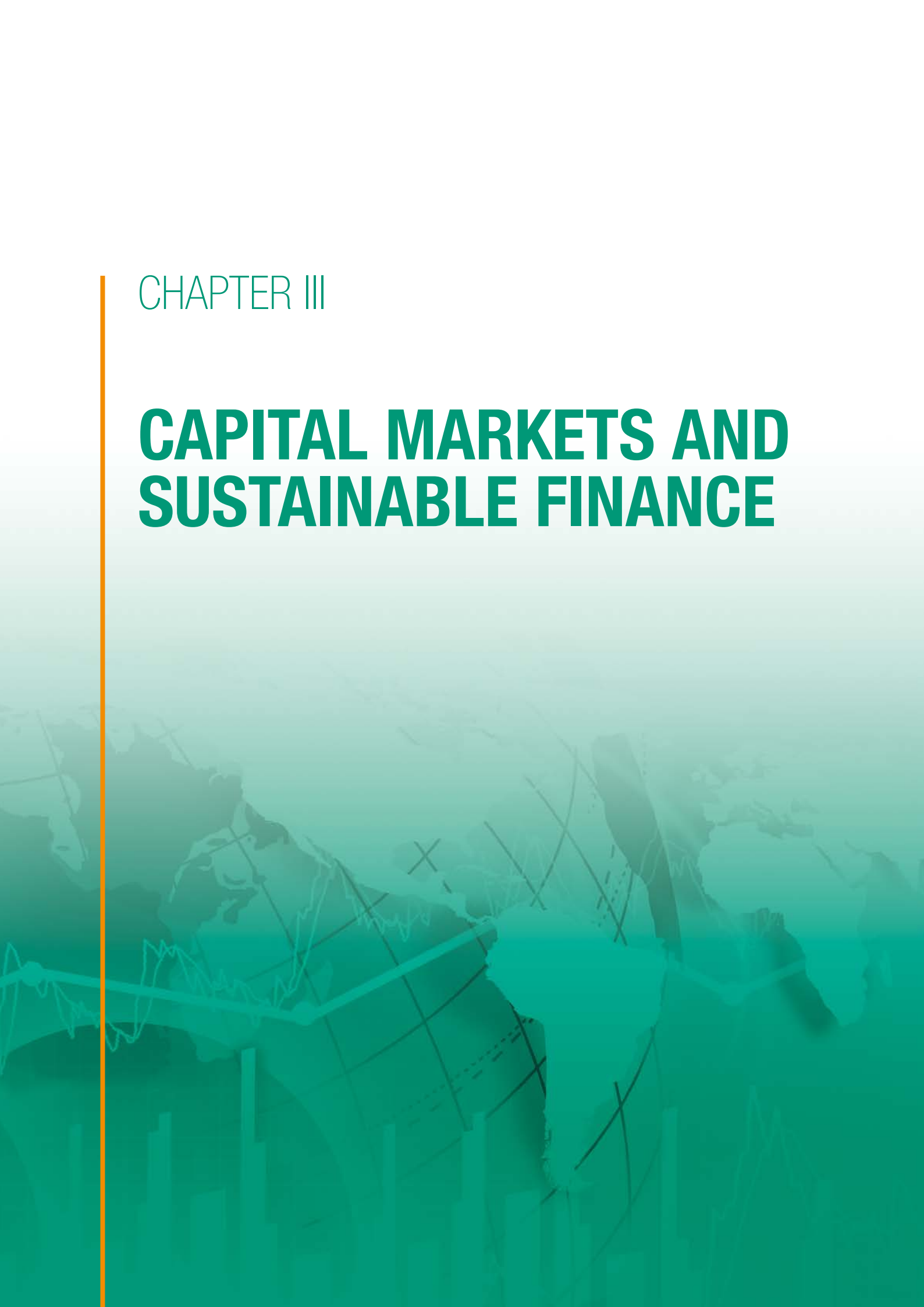
CHAPTER III

CAPITAL MARKETS AND SUSTAINABLE FINANCE



INTRODUCTION

The sustainable finance market remains an important source of capital for investment in sustainable development and the Sustainable Development Goals (SDGs), as well as a driver of change in business mindsets and investment strategies. The value of the global sustainable finance market (bonds, funds and voluntary carbon markets) reached $5.8 trillion in 2022, despite the turbulent economic environment, including high inflation, rising interest rates, poor market returns and the looming risk of a recession that all affected the financial markets.

Sustainable funds continued to be more attractive to investors than traditional funds. The value of the global sustainable fund market fell from its high of $2.7 trillion in 2021 to $2.5 trillion in 2022. Yet, despite the decline in market valuation, net inflows to the market were positive (section III.A.1), in contrast to net outflows from traditional fund markets. This suggests that investors view sustainable finance as a longer-term strategy and are convinced by the business case for sustainable sectors, such as renewable energy.

Sustainable bond issuance declined but its cumulative value increased. It fell from its highs in 2021, down 11 per cent in 2022, though remaining above pre-pandemic levels. However, the outstanding, cumulative value of the sustainable bond market increased, from $2.5 trillion in 2021 to $3.3 trillion in 2022. Green bond issuance remained relatively resilient, falling just 3 per cent in 2022.

This year, this chapter includes analysis of the rapid evolution of voluntary carbon markets (VCMs). These markets, valued at $2 billion, are a small but rapidly growing element in the finance landscape that provides a cross-border channel for financing renewable energy and other climate-related projects in developing countries.

Institutional investors, such as public pension funds (PPFs) and sovereign wealth funds (SWFs), are in a pivotal position to effect change on sustainability-related challenges, and to finance investment in sustainable energy. The capital-intensive and long-term nature of renewables investment corresponds to the maturity profiles of pension fund liabilities and is a good match for sovereign demand for infrastructure investment. UNCTAD's monitoring reveals that, in 2022, more institutional investors disclosed their actions on climate, including investment in sustainable energy and divestment from fossil fuels. Over two thirds of reporting funds have now committed to achieving net zero in their investment portfolios by 2050.

Capital market infrastructure, such as stock exchanges and derivatives exchanges, are at a pressure point in the investment chain and can exert influence on entities, issuers, index providers and other investment stakeholders. In 2022, the number of exchanges with mandatory sustainability reporting increased, as did the number of exchanges providing training to listed companies on sustainability disclosure, including on climate-related matters.

As the sustainable finance market moves from a voluntary to a mandatory governance architecture (section III.D), the number of national, regional and international policies and regulations is increasing. According to UNCTAD's monitoring, at the end of 2022, 35 developed and developing economies and country groupings – accounting for 93 per cent of global GDP – had 388 sustainable finance-dedicated measures in force, with at least 50 introduced in 2022 and more than 50 in development. This underscores the importance that policymakers now attach to the sustainable finance market and their recognition that it plays a crucial role in achieving net zero and increasing investment in sustainable energy.

As the recent 6th Assessment Report of the Intergovernmental Panel on Climate Change (IPCC) showed (IPCC, 2023), the world has all but run out of time to achieve net zero by

2050 along a warming pathway of 1.5°C. Even talk of transition is almost now anachronistic, with investment in sustainable energy (renewables, efficiency measures, and the like) falling short of requirements – despite, for example, investment in wind and solar power being the cheapest and most effective way to reduce carbon emissions (IPCC, 2023).

Progress is being made along the entirety of the investment chain, but a new approach is now needed to move up a gear in our collective climate response and accelerate the energy transition. The first era of sustainability integration, the pioneering era of niche sustainable finance activities, roughly from the 1990s to 2005, gave way to the mainstreaming era, roughly from 2005 to the adoption of the SDGs and the Paris Agreement in 2015, after which many big players, such as exchanges, fund issuers and institutional investors, realized the materiality of sustainability risks and opportunities. Since then, the world has entered the third era of sustainability integration, characterized by standardization and increasing codification, with the development, for example, of the European Union (EU) taxonomy and the standards of the International Sustainability Standards Board (ISSB). The next step requires rapid education and support for investors and other market players, especially in developing countries, before time truly runs out.

UNCTAD's suite of programmes and products on climate and sustainable finance, and the UN Global Sustainable Finance Observatory (GSFO) it coordinates, aim to accelerate the educational process and support investment stakeholders in taking action on sustainability, climate and the energy transition. At UNCTAD's 8th World Investment Forum in October 2023, the global investment for sustainable development community will convene to identify ways and means to leverage capital markets for sustainable development and the climate transition.

A. SUSTAINABILITY-THEMED CAPITAL MARKET PRODUCTS

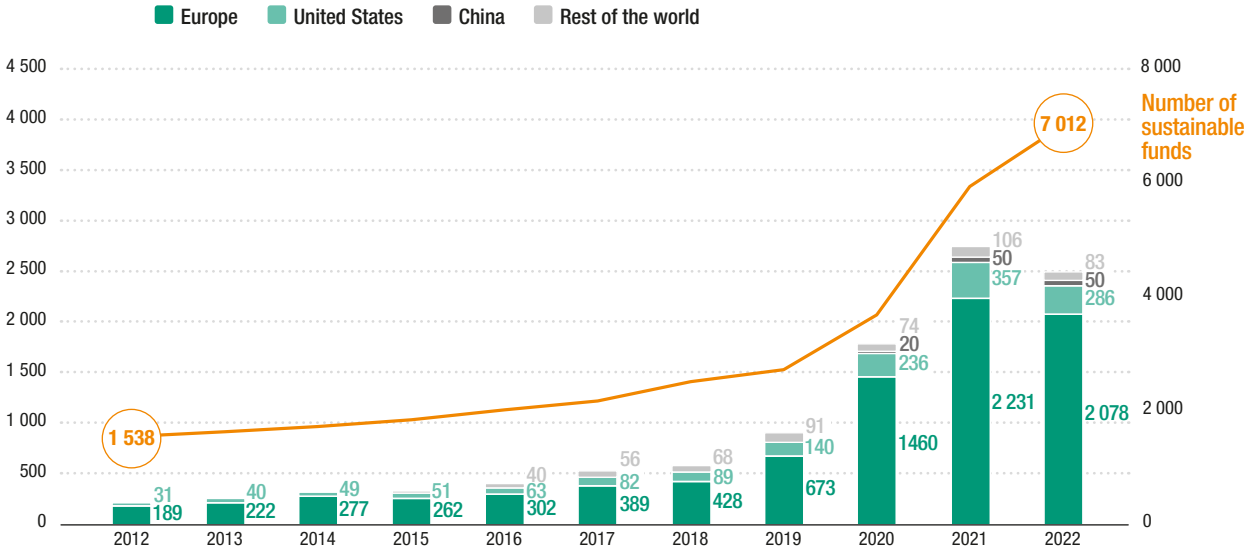
In 2022, the sustainable finance market (funds, bonds and voluntary carbon markets) grew to $5.8 trillion, up 12 per cent from 2021. This was primarily due to the increase in the outstanding issuance of sustainable bonds, which have grown fivefold between 2017 and 2022. The sustainable fund market experienced a retrenchment in 2022, in common with other financial markets, but remained relatively more resilient. Net inflows to sustainable funds were positive, in contrast to net outflows from traditional funds. Nevertheless, a significant proportion of funds may not meet their sustainability credentials, and their performance requires careful examination. Carbon markets saw record prices for the cost per ton of carbon dioxide equivalent (tCO_2e) in 2022. Although the picture is nuanced, the overall positive trend in the sustainable finance market points to continued investor confidence and the resilience of sustainable investment strategies.

1. Sustainable funds

a. Market trends

In 2022, the total number of sustainability-themed funds worldwide increased, although the rate of growth slowed from 2021. The total now stands at 7,012, up 18 per cent from 2021 (figure III.1). The sustainable fund market in Europe continues to be dominant, with over 5,300 sustainable funds or 76 per cent of the sustainable fund universe. The United States and China accounted for 9 per cent and 4 per cent of sustainable funds, respectively. In 2022, more than 900 sustainable funds were launched, representing a 10 per cent decline from 2021, with a slowdown seen across all major markets.

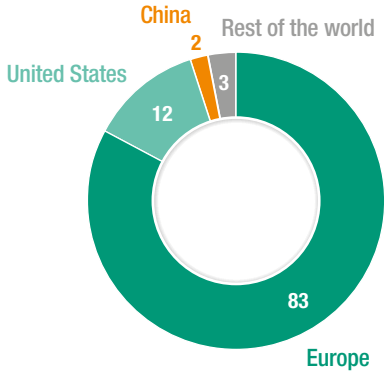
Figure III.1. **Sustainable funds and assets under management, by region, 2012–2022**
(Billions of dollars and number)



Source: UNCTAD, based on Morningstar data.

Despite the increase in the total number of sustainable funds, the total value of sustainable fund assets experienced a 7 per cent drop, from $2.7 trillion in 2021 to $2.5 trillion, in 2022 (see figure III.1). This was primarily a result of falling share prices in leading stock markets, especially in the first three quarters of the year. Europe continued to dominate as the largest sustainable fund market, with assets of $2.1 trillion as of December 2022. That represented 83 per cent of global sustainable fund assets, up 2 per cent from the 2021 market share. As a share of the total European fund market, sustainable funds expanded from 16 per cent to 20 per cent in 2022. In contrast, the value of sustainable fund assets in the United States decreased, from $357 billion in 2021 to $286 billion in 2022, and now accounts for 12 per cent of the global market. China is the world's third largest sustainable fund market, hosting 279 sustainable funds with assets under management of roughly $50 billion at the end of 2022. The assets of sustainable funds in the rest of the world declined from $106 billion in 2021 to $83 billion in 2022, or 3 per cent of the global market (figure III.2).

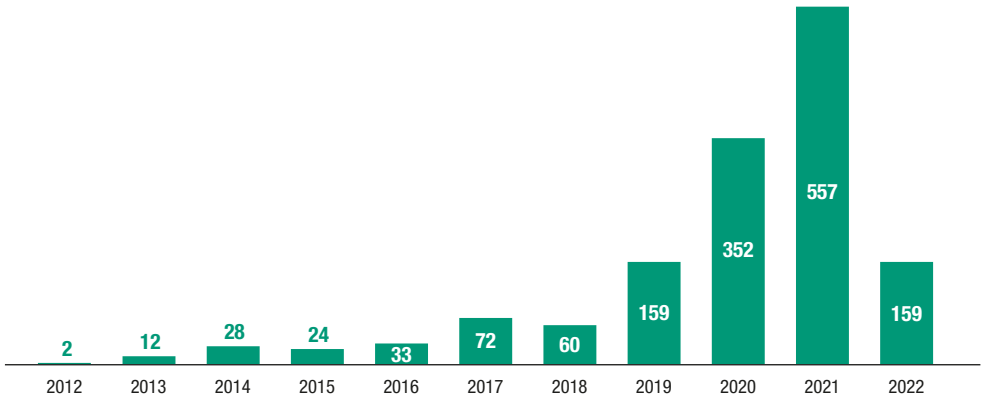
Figure III.2. Distribution of the global sustainable fund market, 2022
(Per cent of assets under management)



Source: UNCTAD, based on Morningstar data.

Global net investment flows to sustainable funds decreased significantly in 2022, to $159 billion from $557 billion in 2021 (figure III.3). This decline was a result of depressed asset values and investor withdrawals amid persistent market uncertainties, including high inflation, rising interest rates, poor market returns and the looming risk of a recession. Net investment flows to sustainable funds in Europe, the largest sustainable fund market, dropped from $472 billion in 2021 to $141 billion in 2022. Investment flows to sustainable funds in the United States remained positive but decreased to $3 billion, the lowest level in seven years. Nevertheless, sustainable funds fared much better than the overall global fund market, which experienced net outflows of $819 billion in 2022, or nearly 3 per cent of total global fund assets at the start of the year. The relative resilience of investment in sustainable funds reflects the continuing confidence of investors in sustainable investment and their long-term positions in the market.

Figure III.3. Net flows to sustainable funds, 2012–2022 (Billions of dollars)



Source: UNCTAD, based on Morningstar data.

In a turbulent market environment where nearly all sectors and asset classes experienced losses, global sustainable funds slightly underperformed traditional funds for the first time since 2018, averaging returns of -19 per cent versus -16 per cent for traditional funds. Several factors contributed to this underperformance, including the rebound of fossil fuel asset values, the underperformance of growth stocks – to which sustainable funds tend to have more exposure than their traditional peers – and the negative impact of the inverted yield curve associated with interest rate hikes on the returns of longer-duration fixed-income investments (Morgan Stanley, 2023).

Despite the efforts of regulators to provide greater transparency in the sustainable fund market, concerns about sustainability-washing have not been completely assuaged. Europe, a frontrunner in sustainable finance regulation, introduced the Sustainable Finance Disclosure Regulation (SFDR) in 2021. Starting from January 2023, issuers of sustainability-themed products are required to disclose more detailed information to support their sustainability claims. However, in the lead-up to the application of the new requirements, the market has seen a wave of products being downgraded or reclassified by issuers from Article 9, the highest sustainability rating, to Article 8, a more broadly defined sustainable product category (Furness and Wilkes, 2023). This reclassification may not improve the clarity and credibility of the sustainable fund market. According to Morningstar, about a quarter of SFDR Article 8 funds may not meet environmental, social and governance (ESG) criteria (Andrew, 2022), which aligns roughly with UNCTAD's assessment of the sustainability of a sample of more than 2,800 sustainable equity funds (see the subsection below). Addressing sustainability-washing issues effectively will require more specific product standards, better disclosure and enhanced third-party ratings.

Another persistent feature of sustainable finance is the relative absence of developing economies in the global sustainable fund market. UNCTAD estimates that sustainable funds domiciled in developing economies account for less than 3 per cent of global sustainable fund assets, and most of these funds are concentrated in China. The lack of standards and sustainability data, as well as the limited size of capital markets in many developing economies, have prevented developing countries from fostering their own market or benefiting further from the international market. To address these issues, developing economies need to establish necessary policy and regulatory frameworks and create an enabling ecosystem for sustainable finance – critical to leveraging the potential of sustainable investment to finance economic and social development.

b. Sustainability performance

To address the sustainability concerns and assess the impact of sustainable funds on sustainable development, the UN GSFO, coordinated by UNCTAD, has been monitoring the sustainability profiles of these funds.

(i) Overall sustainability performance

The Observatory significantly expanded the scope of its assessment in 2022, from fewer than 800 funds in 2021 to more than 2,800 funds, covering 40 per cent of the global sustainable fund market. Of these, 344 funds (12 per cent) claim to be Article 9-compatible products as defined by the EU SFDR standards, which require systematic integration of sustainability into asset allocation. Another 1,739 funds (61 per cent) claim to be Article 8-compatible products, indicating that they take sustainability into consideration in their investment decisions or asset allocation.

Table III.1. Sustainability score by fund strategy, 2022, average sustainability rating

Strategy	Number of funds	Average rating	Average rating by percentile			
			0–25	25–50	50–75	75–100
Overall	2 843	6.9	3.9	6.3	7.4	9.3
Article 9	344	8.3	6.2	7.9	9.0	10.0
Article 8	1 793	6.6	4.9	6.1	6.3	8.8
Other products	756	6.3	3.2	5.9	7.1	9.1

Source: UNCTAD, based on Conser data.
Note: The distribution of fund sustainability ratings by strategy is broken into quartiles, with percentile 0-25 representing the funds that have the lowest sustainability ratings. Article 8 and 9 refer to the EU Sustainable Finance Disclosure Regulation rules, which aim to make the sustainability profile of funds more comparable and better understood by end investors.

Overall, the assessment found that sustainable funds tend to outperform their conventional peers in terms of sustainability, regardless of their choice of sustainability integration strategies, which aligns with UNCTAD findings in previous years (*WIR22*). As a group, the funds in the sample have an average rating of 6.9,[1] compared with an average sustainability rating of 4.0 for the benchmark MSCI global equity index (the MSCI ACWI).[2] However, it is important to note that a quarter of these funds had an average rating of only 3.9, i.e. below the benchmark average (table III.1), raising concerns about their qualification as sustainable investment products.

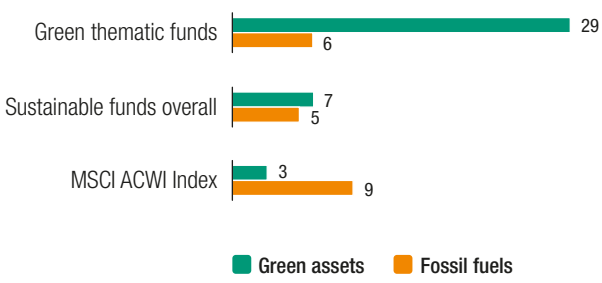
The assessment found that EU SFDR Article 9 products had an average sustainability rating of 8.3, significantly higher than the average rating of the entire sample. Yet, Article 8 products had an average sustainability rating of 6.6, slightly lower than the overall average. It is noteworthy that the quartile of funds with the lowest scores for Article 8 products had an average sustainability rating below 5, indicating that a significant proportion of these products may not meet their sustainability credentials. As such, their sustainability integration practices and performance require careful examination, and external auditing may be necessary. In this regard, the requirements for qualification as Article 8 products may need to be strengthened to ensure the necessary quality in terms of sustainability.

The assessment also found that, as a group, self-claimed sustainable funds in the sample that did not refer to any standards (756 funds) had the lowest rating. Approximately half of the funds in this group had a score below 6, owing to their limited integration of sustainability elements in product construction, or exposure to ESG risks or sensitive sectors such as fossil fuels, tobacco and alcohol, and weapons.

(ii) Climate impact

Thematic funds with a green investment focus, and sustainable funds in general, tend to outperform the overall fund market in terms of their impact on climate sustainability (figure III.4). However, because of the rising value of fossil fuel-related assets, the overall "greenness" of sustainable funds deteriorated slightly from 2021 to 2022, as exposure to fossil fuels increased from 3 per cent to 5 per cent, while exposure to low-carbon assets decreased from 8 per cent to 7 per cent. This shift was caused by a surge in returns on fossil fuel-related assets associated with the impact of the war in Ukraine on the global energy market.

Figure III.4. Exposure of sustainable fund holdings to climate-positive and climate-negative assets, 2022 (Per cent)



Source: UNCTAD.

The climate performance of the 227 self-declared green funds in the sample, measured by their net exposure to climate-positive assets (low-carbon assets minus fossil fuels), remained at 23 per cent in 2022. However, it is important to note that about 15 per cent of these "green funds" had fossil fuel exposures of over 10 per cent (including investment in fossil fuel companies in transition, in some cases), which may call their self-labelled green credentials into question. In addition, some of the largest green funds had significant investments in large-cap high-tech companies, which have a high carbon intensity because of the energy consumption of their data centres and other operations.

(iii) SDG alignment

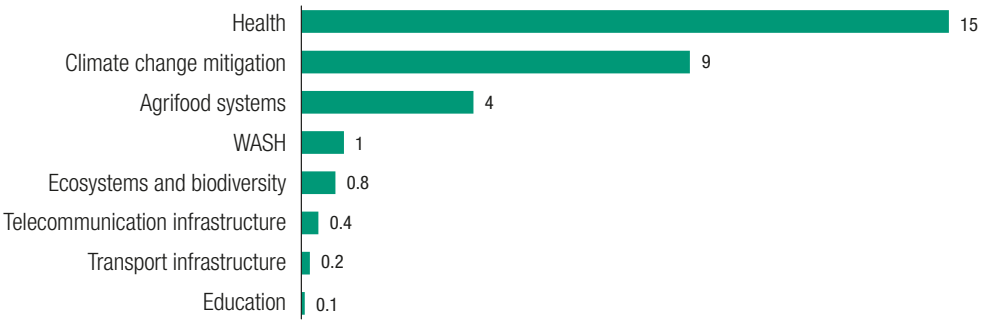
Sustainability-themed products have a critical role to play in financing sustainable development, as defined by the SDGs. In addition to the responsible investment dimension, these financial instruments should be constructed to channel much-needed investment for sustainable development. Indeed, the SDGs have become an important framework for institutional investors to use to define their sustainable investment strategies, and more investors are incorporating an SDG perspective in their investment decisions (section III.B).

To evaluate the contribution of sustainable funds to sustainable development, UNCTAD has been monitoring fund alignment with the SDGs by measuring how much of a fund's portfolio is invested in eight sectors key to the SDGs: transport infrastructure, telecommunication infrastructure, WASH (water, sanitation and hygiene), agrifood systems, climate change mitigation (renewable energy and cleantech), health, education and ecosystem diversity (figure III.5). These sectors are critical in the attainment of the SDGs and represent the largest investment needs and opportunities in terms of SDG financing.

As of the end of 2022, the 2,843 sustainable funds covered by the assessment had committed $537 billion (30 per cent of their holdings) to the eight SDG sectors, up from 26 per cent in 2021. Four sectors – health, renewable energy, agrifood systems, and WASH – remain the largest recipients of funding, accounting for 95 per cent of the assets committed to these SDG sectors. The single largest sector for fund investment remains health, which covers health infrastructure, medical services, pharmaceuticals and medical devices. It is followed by climate change mitigation (including renewable energy).

Yet investment in sustainable infrastructure and education, two critical sectors for achieving the SDGs, remains extremely low. Innovative product development may be needed to attract more investment to these sectors. Increased securitization and privatization of assets in these sectors could also help create more investment opportunities for investors via capital markets.

Figure III.5. **Share of sustainable fund assets invested in SDG sectors, 2022**
(Per cent)



Source: UNCTAD.

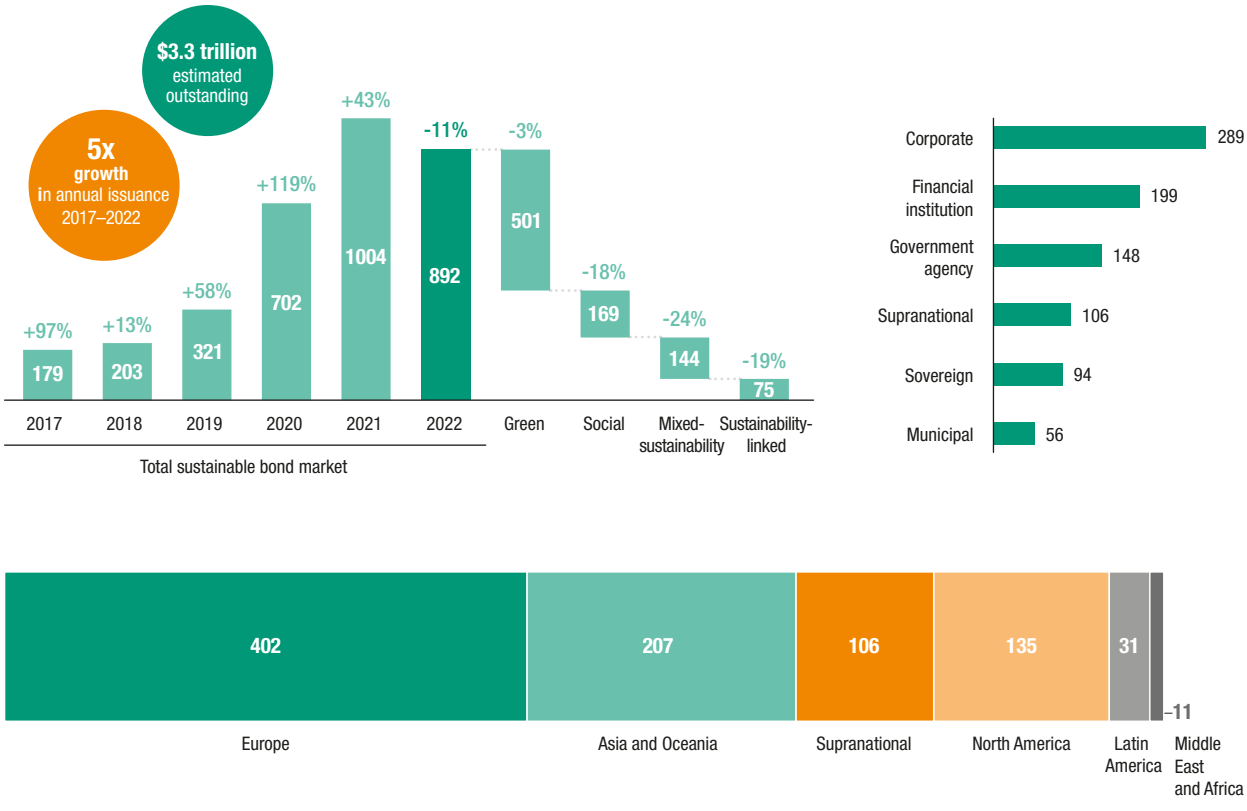
2. Sustainable bond markets

After a record-setting year in 2021, issuance of new sustainable bonds[3] declined in 2022, shrinking 11 per cent to $892 billion, from the all-time high of $1.04 trillion (figure III.6). This decline nevertheless outperformed the estimated 19 per cent decline in issuance of new bonds in the broader global bond market (S&P, 2022). Challenges related to geopolitical tensions and inflation brought to an end a decade of continuous growth, but longer-term trends persist with sustainable bonds annual issuance growing fivefold between 2017 and 2022.

Social and mixed-sustainability bonds saw sharp declines of 18 and 24 per cent. Green bonds, the oldest market for sustainable bonds, exhibited resilience with only a 3 per cent decrease. While sustainable bond issuance shrank in all other regions, Asia and Oceania bucked the trend and reported a 17 per cent increase.

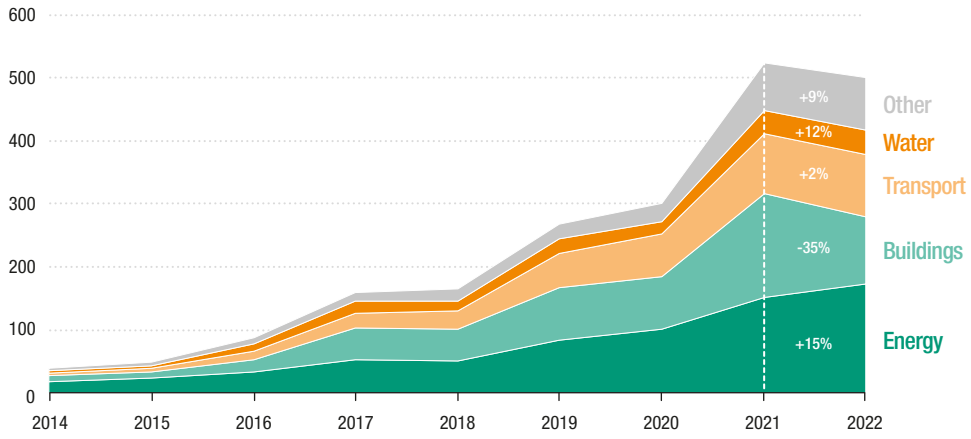
Despite the overall weakness of the bond market in 2022, green bonds continued to be a growing source of finance across the key sustainable development sectors of energy and water, which both saw double-digit percentage increases between 2021 and 2022 (figure III.7). A large drop in the use of green bonds to finance buildings led the overall decline in 2022. Corporate, government agency and municipal issuers all saw steep declines in the value of bonds issued. Nevertheless, financial institutions and supranational entities saw big gains in 2022, which helped to prop up the overall green bond market (figure III.8).

Figure III.6. **Global sustainable bond issuance, 2017–2022, and by category, issuer type and region, 2022**
(Billions of dollars and year-on-year growth)



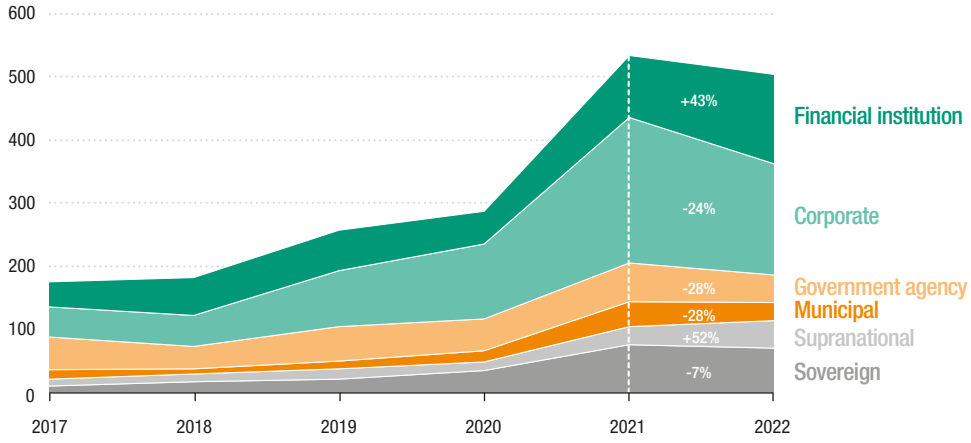
Source: UNCTAD, based on information from Environmental Finance.

Figure III.7. **Green bond market size by industries financed, 2014–2022**
(Billions of dollars and per cent change 2021–2022)



Source: UNCTAD, based on information from Climate Bonds Initiative.

Figure III.8. **Green bond market size by issuer type, 2017–2022**
(Billions of dollars and per cent change 2021–2022)



Source: UNCTAD, based on information from Environmental Finance.

a. Green bonds

Key elements of basic infrastructure such as energy, buildings, transport, and water continue to receive the largest investment through green bonds. While the transport and water sectors maintained their momentum with moderate growth in 2022, funding for low-carbon buildings noticeably decreased. The energy industry, whose share of total investment has shrunk in recent years (from 50 per cent of the total market in 2014 to 35 per cent in 2021), re-emerged in 2022 as the recipient of the highest volume of green bond financing with a 15 per cent year-on-year increase. The resilience and resurgence of the renewable energy sector reflects the continued focus on low-carbon energy to achieve emission reduction goals as well as the need for energy security and independence, made urgent by the war in Ukraine.

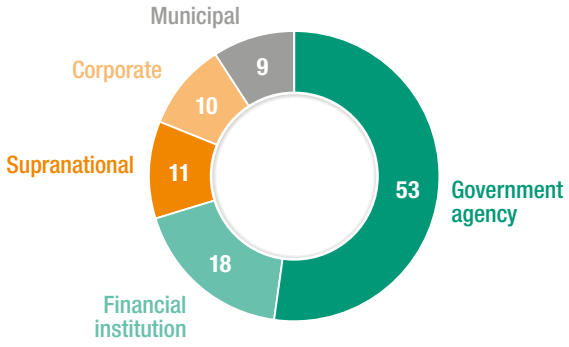
Despite a contraction in aggregate volume, policies such as the NextGenerationEU Green Bond framework continued to fuel expansion in Europe, which remains a clear leader in the green bond market. In 2022, three countries in the Eurozone – France, the Netherlands, and Germany – were among the five largest issuing countries while the European Union itself was the largest single issuer of green bonds. Pending policy measures such as the European Green Bond Standard (accompanying the broader NextGenerationEU programme), which is currently under negotiations between the European Commission, can further drive this momentum. Similar developments such as the launch of China's Green Bond Principles and passage of the Inflation Reduction Act in the United States can potentially replicate this growth in other regions as well.

Even as the total green bond market shrank by 6 per cent in 2022, supranational funds and financial institutions continued to exhibit strong year-on-year growth, with increases of 52 per cent and 43 per cent respectively.

b. Social bonds

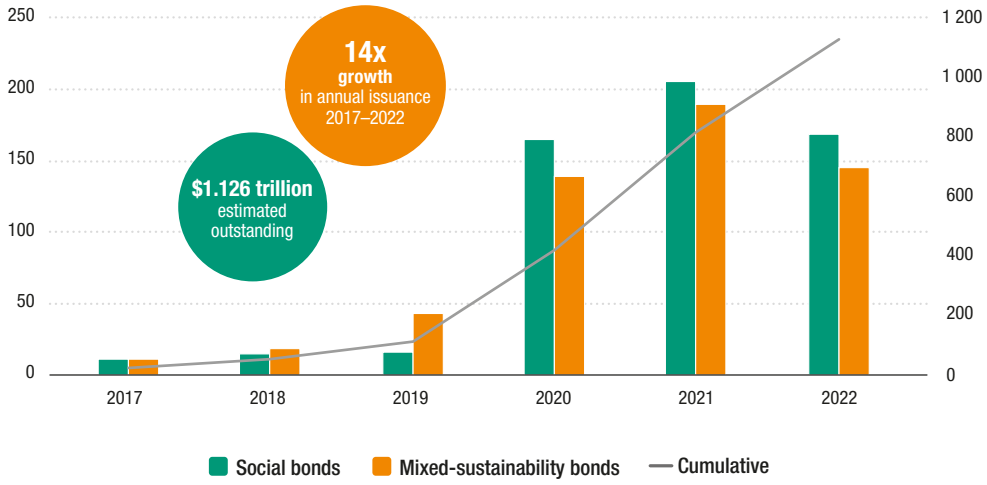
Despite declines in 2022 in line with that of the broader bond market, social and mixed-sustainability bonds remained on a long-term growth trajectory, with a nearly 14-fold increase in annual issuance from 2017 to 2022 (figure III.9). The efforts to remedy the fallout of the pandemic turbocharged the growth of the social bonds market, but even as the immediate effects of the pandemic subside social bonds will likely continue to make up a prominent share of the sustainable bond market. Although government agencies continued to be responsible for the bulk of the market in 2022, there was significant growth in the issuance of social bonds by corporate and financial institutions (figure III.10).

Figure III.10. **Social bond issuance by issuer type, 2022** (Per cent)



Source: UNCTAD, based on information from Environmental Finance.

Figure III.9. **Social and mixed-sustainability bond issuance, 2017–2022**
(Billions of dollars)



Source: UNCTAD, based on information from Environmental Finance.

Lingering effects of the pandemic coupled with a growing focus on the SDGs, the 2030 Agenda and diversity, equity and inclusion have been driving investor demand to socially minded investments. As institutional investors put more emphasis on the social element of ESG metrics, financial and corporate entities are likely to keep innovating and drive the issuance of private sector social bonds. Looking ahead, small and medium-sized enterprises, affordable housing, health care and regional resilience are areas that will receive more focus.

3. Voluntary carbon markets

Carbon markets today are primarily either compliance markets or voluntary markets (box III.1). Compliance carbon markets (CCMs), with an estimated value of issued credits between $700 billion and $800 billion per year, are much larger than voluntary carbon markets (VCMs), at only about $2 billion per year. VCMs nevertheless provide a unique feature that most CCMs do not: the ability to channel investment capital across borders to finance new projects aimed at emissions reduction or avoidance. Most VCM credits are being issued for projects in developing countries and sold to buyers in developed countries (primarily European countries and the United States). In this way, the nascent VCM market holds great potential as a new channel for sustainable finance in climate sectors, such as renewable energy or reforestation.

Box III.1. Introduction to carbon markets

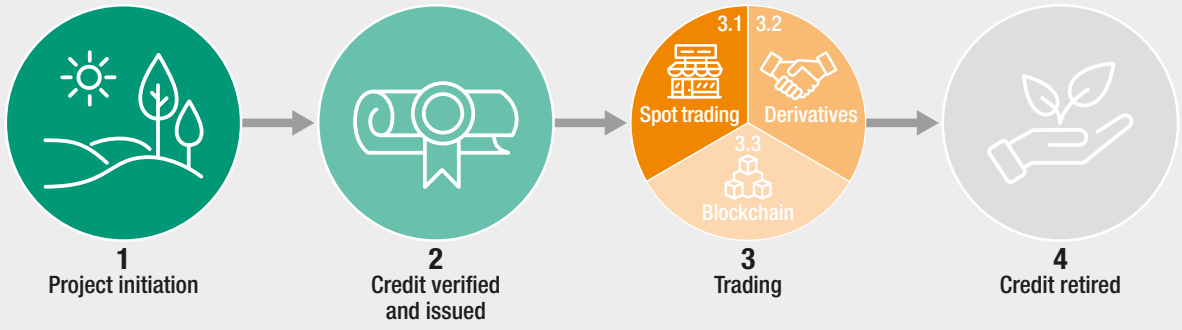
Carbon markets are facilities where emission allowances, credits and financial instruments based on such credits are bought and sold. Carbon credits represent a reduction, sequestration or avoidance of the emission of a set amount of carbon dioxide or other greenhouse gas (typically, one credit is equal to 1 ton of CO_2 equivalent). A buyer of such a credit is buying the allowance to emit this set amount of greenhouse gas, which is offset against the credit amount.

Article 6 of the Paris Agreement opens the door to countries to use international carbon markets to meet their nationally determined contributions. More than two thirds of countries intend to use carbon markets to meet their contributions, and a number of countries are investing in state-of-the-art digital infrastructure to enable participation in international carbon markets. The World Bank estimates that trading in carbon credits could reduce the cost of implementing nationally determined contributions by more than half (World Bank, 2022b). Replacing the Kyoto Protocol's international carbon credit programmes, the mechanisms under Article 6 are intended to intensify and accelerate action by creating new markets.

Carbon markets are of two main types: compliance carbon markets (CCMs) or voluntary carbon markets (VCMs). CCMs are jurisdiction specific and mandatory and create a price on carbon that is intended to incentivize lower emissions. VCMs serve the demand for credits outside of regulated schemes and enable the buying and selling of emission credits that are issued under projects that achieve emission reductions. Participants in the voluntary market range across companies, governments and private individuals aiming to reduce their carbon footprint.

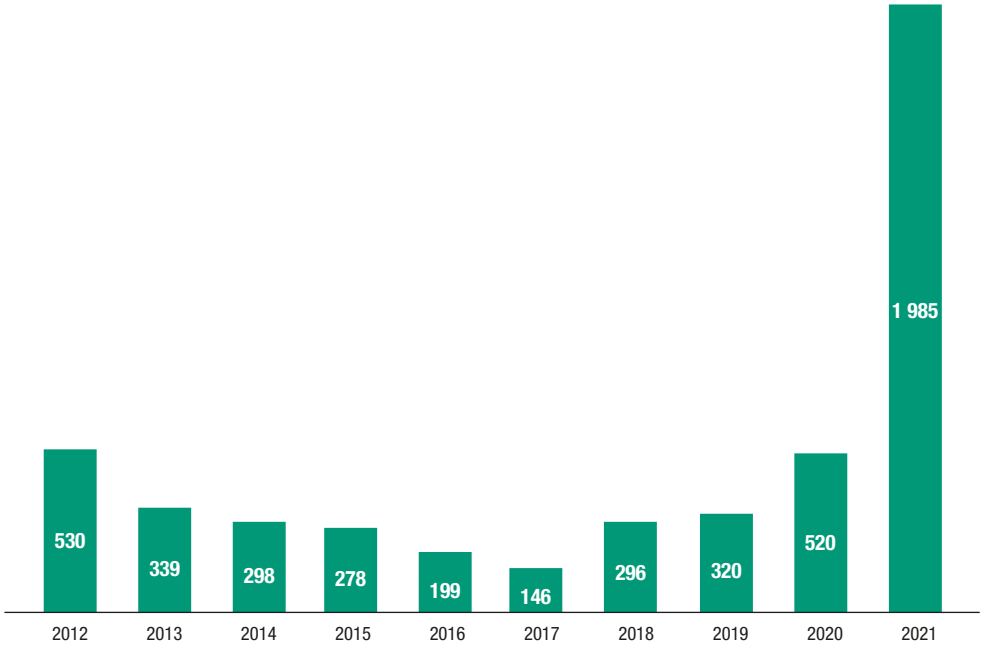
Voluntary markets rely on verification or certification of projects to provide prospective buyers with confidence about the claimed amount of carbon emissions to be avoided, decreased or removed. The value chain of a VCM is typically made up four elements: project initiation, project verification and credit issuance, trading and finally retirement of the credit when the emissions offsets are claimed (box figure III.1.1).

Box figure III.1.1. Typical structure of a VCM



Source: UN SSE (2022).

Figure III.11. **Voluntary carbon market size by value of traded carbon credits, 2012–2021** (Millions of dollars)



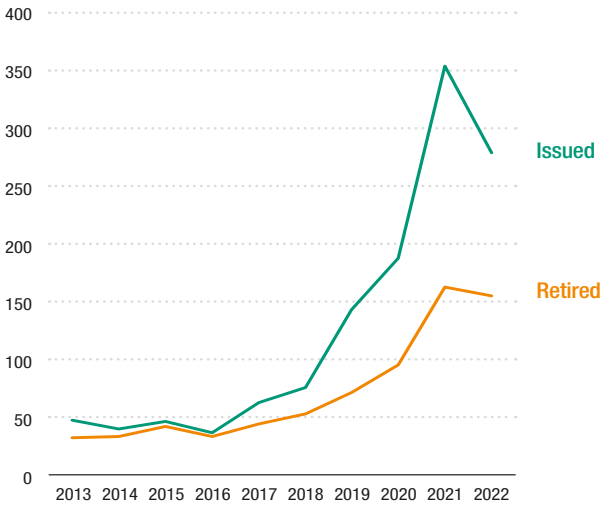
Source: UNCTAD, adapted from Ecosystem Marketplace (2022).

Globally, the dollar value of credits issued on VCMs has nearly quadrupled between 2020 and 2021, the latest year for which data is available (figure III.11), with huge growth in the number of carbon credits issued (figure III.12). Although issuance of VCM credit dropped in 2022 because of uncertainty in the global economic outlook resulting from the war in Ukraine and fears of a global recession, it was still higher than in 2020. Demand for renewable energy projects remained high, despite experiencing a slight decline from 2021.

Because the energy sector is a leading contributor to emissions, decarbonizing this sector remains essential in combating climate change. Financing renewable energy solutions has therefore been a priority in emission avoidance activities. Renewable energy projects make up about 37 per cent of all projects that issue VCM credits (Climate Focus, 2022), making renewable energy credits the most abundant credits in VCMs, and available at some of the lowest prices (World Bank, 2022). Renewable energy projects typically cover the following subcategories (both large- and small-scale): wind, solar, hydro, renewable biomass and mixed-source. In 2022, 93 per cent of renewable energy carbon credits issued related to just three technologies: large-scale wind, hydropower and solar projects (figure III.13).

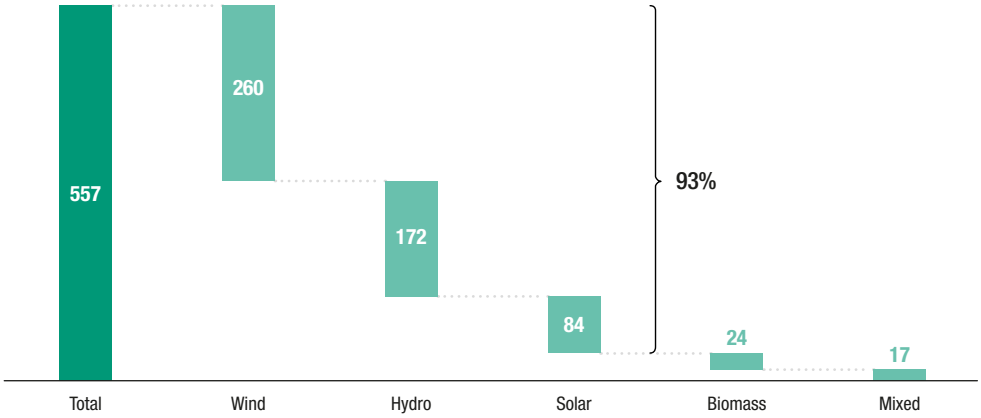
Historically, renewable energy credits have prompted large issuances to overcome the challenge that renewable energy solutions were generally cost-prohibitive, particularly in developing countries (Sylvera, 2022). Recently, declining costs

Figure III.12. **Growth of voluntary carbon market issuance and retirement, 2013–2022** (Million tons CO_2 equivalent)



Source: UNCTAD, adapted from Climate Focus (2022).

Figure III.13. **Voluntary carbon credits issued for renewable energy projects, 2022** (Millions of credits)



Source: UNCTAD, adapted from Climate Focus (2022), Voluntary Carbon Market Dashboard.
Note: One credit equals one ton CO_2 equivalent.

driven by technological innovation and greater adoption of renewable energy, have made grid-connected renewable projects more viable and financially attractive. As a result of this mainstreaming of renewable energy, the risk has arisen that renewable energy credits may not meet the *additionality* criteria of a high-quality carbon credit.[4] Some carbon-credit certifying bodies no longer issue credits from renewable energy projects unless they originate from a least developed country. Yet, renewable energy projects can still be certified to issue renewable energy certificates. Different from a carbon credit, a renewable energy certificate enables a buyer to report electricity from a renewable energy source as a reduction in Scope 2 emissions (Bjørn et al., 2022).

Carbon credits that focus on renewable energy projects are likely to continue to form part of the VCM ecosystem. They can make clean energy alternatives more affordable,[5] and in an environment where carbon credits are increasingly subject to requirements for co-benefits, they also play a role in financing the achievement of other SDGs.

Some civil society critics of VCMs argue that measures of the size of such markets are misleading because they do not clearly indicate how much money ultimately reaches a project after expenditures related to intermediary and other fees. Efforts to improve transparency are critical to overcome this challenge.

Through VCMs, CCMs or other compliance mechanisms such as carbon taxes, approximately 23 per cent of global emissions are now covered by some form of carbon pricing (UNDP, 2022). While the market value of VCMs is currently relatively small, policymakers and private sector actors are looking to VCMs as part of the answer to finance the transition to net-zero emission economies, including the financing of renewable energy. VCMs are growing rapidly and have the potential to provide a new source of international investment for developing countries' climate mitigation efforts. VCMs should be considered in combination with other policy instruments designed to attract private investment flows to help finance developing countries' climate mitigation efforts as part of a just transition to net-zero emission economies. In 2022, the United Nations Sustainable Stock Exchange (UN SSE) initiative launched a new workstream to explore the role of exchanges in relation to carbon markets. At COP27, it released a Market Monitor for VCMs (UN SSE, 2022) and announced the formation of an SSE Advisory Group to develop guidance for exchanges that are engaging with carbon markets. That guidance is set for

release in Q3 of 2023 at the UNCTAD World Investment Forum. More work will also be needed from market regulators to further ensure the integrity and transparency of carbon markets (box III.2).

Box III.2. Carbon market regulation

IOSCO began work in 2022 on promoting the understanding and sound functioning of both CCMs and VCMs, mindful of the prospect that cross-border trading of carbon credits may expand. The underlying objective was to better understand the set-up and potential vulnerabilities of these markets, with the aim of fostering market integrity. During COP27, IOSCO announced consultations on the development of sound and well-functioning carbon markets, and the publication of a Consultation Report on recommendations for establishing sound CCMs and of a Discussion Paper on key considerations for enhancing the resilience and integrity of VCMs. The discussion paper identifies key considerations for regulators contemplating frameworks to promote market integrity in VCMs and to help overcome some of the present limits in these markets. It proposed a series of toolkits with suggested ways to address each of the key considerations. IOSCO's work builds on the lessons learned from traditional finance and market structures (transparency, access, integrity, data reporting). The focus of IOSCO for the remainder of 2023 will be to finalize its recommendations for CCMs, develop a consultation paper setting out proposed recommendations for VCMs and collaborate with the UN SSE on related capacity-building programmes.

Source: IOSCO.

B. INSTITUTIONAL INVESTORS

Institutional investors continued to integrate sustainability performance and climate risk management into their investment strategies, in 2022, as well as commit to net zero in their portfolios through fossil fuel divestment and sustainable energy allocation. SWFs and PPFs, with their long-term investment horizons, significantly increased their investment in renewable energy as an important part of their strategies to decarbonize and diversify their portfolios. Nevertheless, a significant number of funds still do not disclose any information on their sustainability performance and a majority of funds still do not disclose or have not committed to net zero in their investment strategies, putting at risk the long-term financial health of millions of beneficiaries.

In 2022, volatile financial markets, reflecting geopolitical tensions and policy changes in the macroeconomic environment, negatively affected the financial positions of institutional investors. Global public pension fund assets, for example, dropped 4.5 per cent, from $22.3 trillion in 2021 to $21.3 trillion.[6] The sustainable investment strategies of funds were challenged by the rising returns for oil and gas companies and the downward pressure on returns for investment in renewable energy (section III.A). Fixed-income products, which usually provide the fiduciary bedrock of low-risk, long-term income streams for institutional investors, became less predictable in the past year, with inflationary risks potentially discounting the value of longer dated bonds.

Despite this, institutional investors continue to make progress on incorporating sustainability criteria into their investment strategies and asset allocation. UNCTAD monitoring shows that institutional investors, such as PPFs and SWFs, are becoming more active in assessing and responding to sustainability risks, in particular those related to climate change. (UNCTAD, 2023).

This section examines the sustainability integration activities of the world's 100 largest PPFs and SWFs, by assets under management, and the actions they are taking on climate and sustainable energy investment. More than half of these funds disclosed information on their sustainability practices and performance in 2022. The rapidly evolving regulatory environment, including the rollout of more widely adopted standards of sustainability reporting, is having an impact on fund disclosure and investment decisions. More funds are employing climate-risk analysis in their investment strategies and increasing engagement with investees.

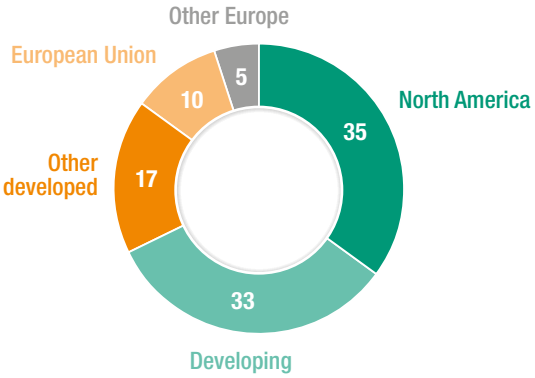
However, many investors in UNCTAD's top 100 still fail to disclose or report on sustainability-related risks and are not moving quickly enough to reorient portfolios, especially with regard to climate-related action. Among those that do report, the quality and scope of reporting is often not consistent or comparable, and there is often a lack of specific key performance indicators or targets.

1. Top 100 pension and sovereign wealth funds: latest trends in ESG integration

UNCTAD's analysis of the sustainability integration practices of the world's top 100 PPFs and SWFs includes the top 70 PPFs, accounting for $12.2 trillion of assets under management – or more than 50 per cent of the PPF total – and the top 30 SWFs, accounting for $9.2 trillion of assets under management – or 79 per cent of the SWF total. Two thirds of funds are from developed economies, with more than a third from North America, and one third from developing economies (figure III.14).

In 2022, 55 of the top 100 funds reported on their sustainability activities, up from 47 that reported on sustainability issues in 2021. This reporting was made either in a specialized responsible investment or ESG report or in significant detail in an annual report. In general, funds from developing countries reported on significantly fewer areas of sustainability performance than did those from developed countries, with the exception of Singapore. Geographical location and governance seem to have the largest influence on whether a fund publishes an ESG report, and both are likely influenced by the strength of regulations within the national framework. It is not surprising therefore that all funds from the EU report, since the EU has put in place a relatively comprehensive sustainability disclosure framework in recent years, highlighting the importance of national or regional regulation for the adoption of sustainable and responsible investment practices (section D).

Figure III.14. **Distribution of the top 100 funds, by region, 2022** (Number of funds)



Source: UNCTAD, based on Global SWF, 2022.

The 45 funds that still do not report on sustainability integration include 30 PPFs and 15 SWFs. SWFs remain relatively less transparent and have farther to go in terms of sustainability disclosure. These funds are based mainly in the United States, Asia and the Middle East. The size of the fund does not have a significant influence on whether it reports, with reporting and non-reporting funds having the same average assets under management: $216 billion.

The great majority of reporting funds have a clear vision for their sustainable investments and have introduced internal policies and guidelines to support the integration of an ESG or SDG perspective in their investment strategy. Two thirds have put in place a dedicated team to coordinate ESG-related investment. However, despite commitment by many funds to sustainable investment, just over half of reporting funds set an overall target or goal for sustainable investment or asset allocation in their portfolios (figure III.15), and even fewer use measurable key performance indicators to monitor and evaluate their sustainability performance.

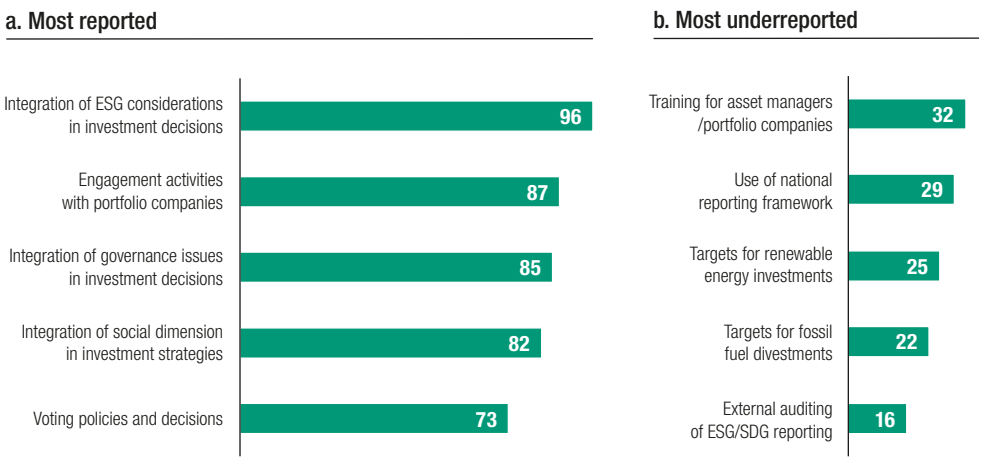
Figure III.15. **Relevant sustainability-related policies of funds, 2022**
(Per cent of reporting funds)

Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

Reporting funds are doing well in several areas of sustainability integration. Most reporting funds provided useful information on how they integrate general ESG considerations, governance and social dimensions in their investment decisions as well as their policies on investee engagement and voting (figure III.16). Top-performing funds go further, for example outlining criteria for screening for aggressive tax avoidance or gender diversity on company boards when making investment decisions and engaging regularly and comprehensively with investee companies after investing (box III.3).

However, several important topics related to sustainability performance are disclosed by only a small number of funds. For example, the use of external auditing of ESG reporting was reported by only 16 per cent of funds. Despite many reporting funds now targeting net zero by 2050 in their policies, only a third of funds publish information about their specific targets

Figure III.16. **Top five areas: most reported and most underreported, 2022**
(Per cent of reporting funds)



Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

Box III.3. Integrating sustainability performance in investment decision-making

Canada Pension Plan Investments (CPP) sets itself apart by publishing a detailed sustainable investment report. The report sheds light on CPP's sustainability integration methods, which are incorporated throughout all stages of the investment life cycle. This includes before and during the asset holding period, as well as when CPP's investee companies prepare for listing. CPP's value identification process takes place before investing, identifying sustainability-related risks through comprehensive research reports, industry-specific frameworks, bespoke databases, detailed evaluations, and climate change mitigation and adaptation criteria. After investing, the focus shifts to creating value through constant monitoring of the investees' operations, using a range of tools including benchmarking and abatement capacity assessments. CPP's Integrated Sustainable Investing Framework reflects a multilayered governance approach to its sustainability strategy, from board to unit level.

Among reporting SWFs, Norges Bank Investment Management (NBIM) of Norway – the largest hydrocarbon-resourced fund in the world – has one of the most detailed reports on sustainability integration. NBIM places strong emphasis on active ownership, namely by having regular dialogues with investee companies on sustainability-related issues and consistently reporting on their progress and outcomes. NBIM publishes expectation documents, that form the basis for its engagement, covering key sustainability topics and encouraging investees to integrate sustainability considerations in their operations to minimize negative impacts on the environment and society.

Sources: CPP Investments, 2022 Report on Sustainable Investing, and NBIM, 2022 Annual Report.

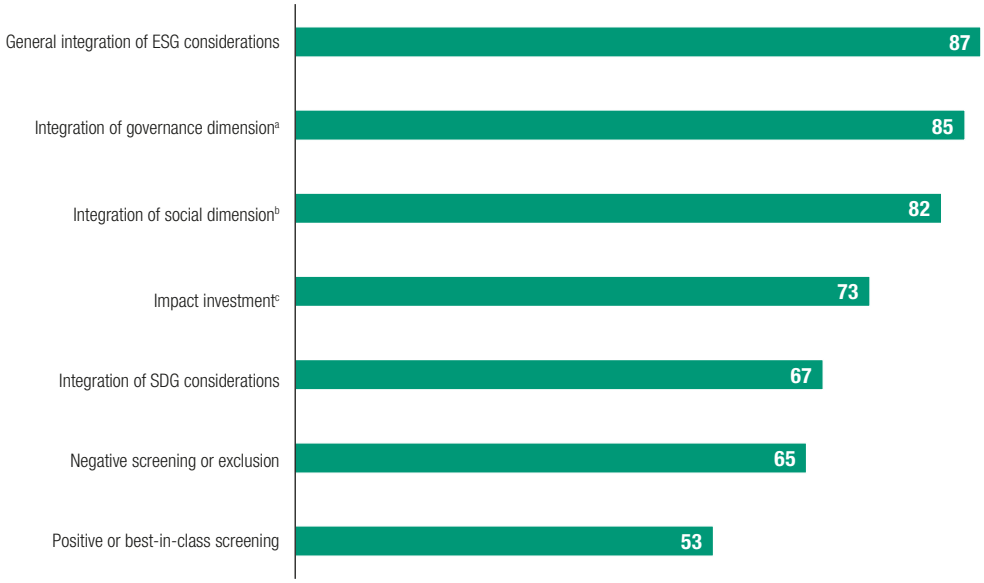
for renewable energy investment and fossil fuel divestment. Among the topics least reported is the provision of training for portfolio companies and asset managers. Lack of disclosure of such topics could create conflicts between the policies and strategies of funds and asset managers, as well as investees, who may be guided by different performance criteria.[7]

With respect to sustainability investment strategies, PPFs and SWFs employ a combination of approaches (figure III.17). The majority integrate a sustainability perspective across their investment activities, including equities, fixed income, alternative assets, and public and private markets, which may also employ negative screening of certain assets (in particular, tobacco, weapons and thermal coal).

It is noteworthy that more funds are taking a thematic approach and are integrating the SDGs in their investment decision-making. Nearly three out of four reporting funds use an impact investment strategy that either targets thematic sectors, such as renewables and climate solutions, or uses a specific ESG-related instrument, such as green bonds. The SDGs are becoming a useful framework for sustainability integration, with 67 per cent of the funds explicitly considering one or more SDGs in their investment decision-making processes or making attempts to align their holdings with the SDGs, up from 48 per cent in 2022.

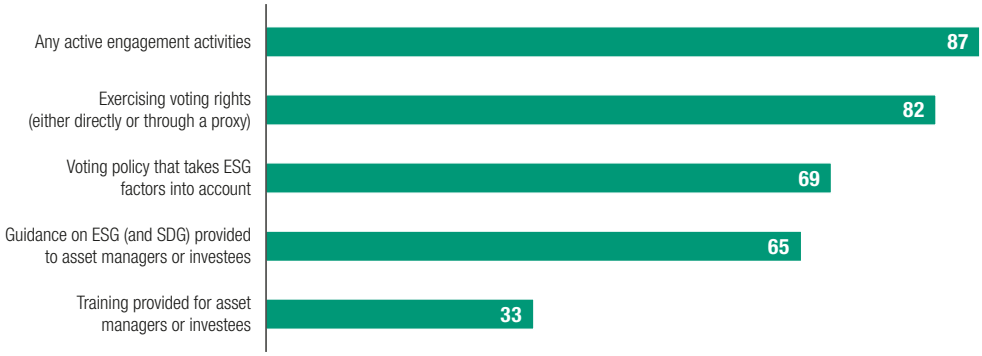
UNCTAD monitoring reveals that institutional investors have increasingly prioritized active engagement as part of their investment strategy. More than four out of five funds declare the use of active engagement activities with issuers and the exercise of their voting rights on sustainability-related issues (figure III.18). Almost two thirds of the funds have voting policies that take sustainability factors into account and provide ESG guidance to asset managers and/or investees.

Figure III.17. **Sustainable investment strategies used by funds, 2022**
(Per cent of reporting funds)



Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.
Note: Funds can report more than one strategy.
[a] ESG-oriented sectors (e.g. renewable energy, green housing) or capital market instruments (e.g. green bonds, ESG funds) or markets (emerging and developing economies) in ESG investment.
[b] For example, child labour, diversity.
[c] For example, executive pay, board diversity, tax.

Figure III.18. **Elements of active ownership by funds, 2022**
(Per cent of funds reporting)

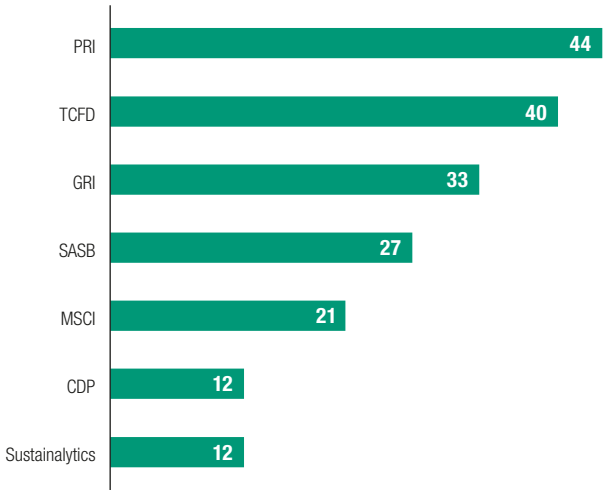


Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

Despite calls for divestment from conventional energy and the anticipated impact of regulatory changes, funds often choose to engage with investees rather than exclude them. Increasingly, funds view engagement as a more realistic and effective means of acting in accordance with their sustainability goals and stewardship values. By doing so, funds can influence changes in investee companies on issues such as climate action, and can encourage and support other investors to follow suit. Exclusion tends to be the last resort, if engagement fails to deliver the intended outcomes.

PPFs and SWFs show an increasing interest in standardizing sustainability reporting with recognized international standards: most reporting funds use at least one international standard or benchmark as a guiding framework for sustainability reporting (figure III.19). The Principles for Responsible Investment (PRI) and the Task Force on Climate-Related Financial Disclosures (TCFD) are the two most commonly used reporting frameworks, followed by those of the Global Reporting Initiative (GRI) and the Sustainability Accounting Standards Board (SASB). However, the many international standards employed by these institutional investors vary significantly and focus on specific aspects of sustainability integration. Greater convergence in international standards is therefore important and, towards this end, efforts by the ISSB to create a global baseline for sustainability disclosure are a positive move and may help change the situation.

Figure III.19. **Sustainability-related frameworks and reporting standards used by funds, 2022** (Number of reporting funds)



Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

To establish a universal framework and enhance consistency and comparability in sustainability integration, including sustainability disclosure, UNCTAD and the UN Environment Programme (UNEP) have prepared a guide on sustainability integration for institutional investors based on international practices and widely recognized international standards. It will be unveiled during the World Investment Forum 2023.

2. Commitment to net zero and investment in sustainable energy

a. Climate actions by institutional investors

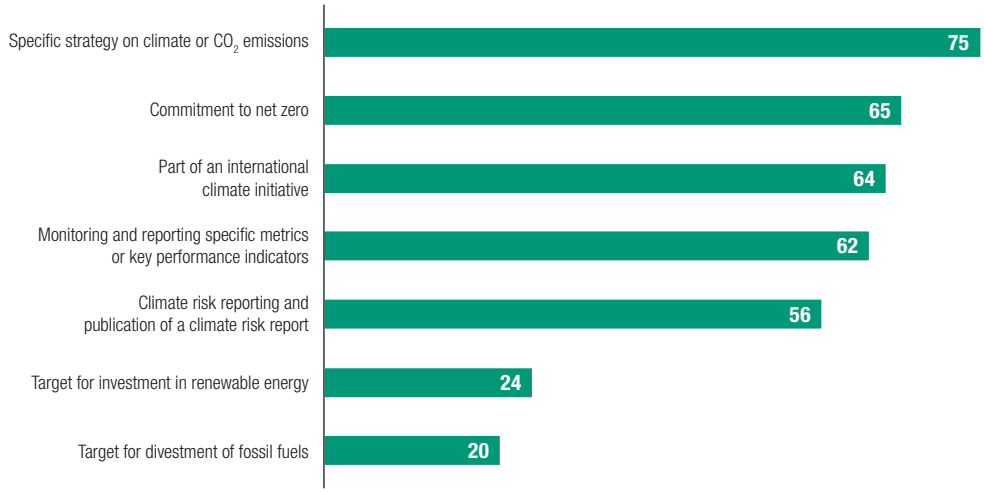
As disclosed by reporting funds, climate action has emerged as the cornerstone of sustainability integration of PPFs and SWFs, with many funds having incorporated climate change factors into their risk management and investment decision-making.

Climate action by institutional investors has, for the most part, focused on CO_2 emissions, commitment to net zero and investment in sustainable energy (figure III.20). In some cases, the absence of material requirements on climate action has led to some institutional investors opting out of global climate initiatives.

Nevertheless, UNCTAD monitoring finds that three out of four reporting funds have developed a specific strategy or action plan on climate and CO_2 emissions, highlighting the importance that funds give to both climate risks and opportunities. Over two thirds of these funds have indicated their commitment to achieve net zero by 2050 in alignment with the Paris Agreement, and almost two thirds of funds have signed up to an international climate response initiative. Over half of funds now publish specific information on climate risks, either in a separate section in their annual reports or in a dedicated report on climate risks. Almost a quarter of funds indicate a target for investment in renewable energy and fossil fuels, although detailed information on investment and divestment within their portfolio management is not consistently disclosed.

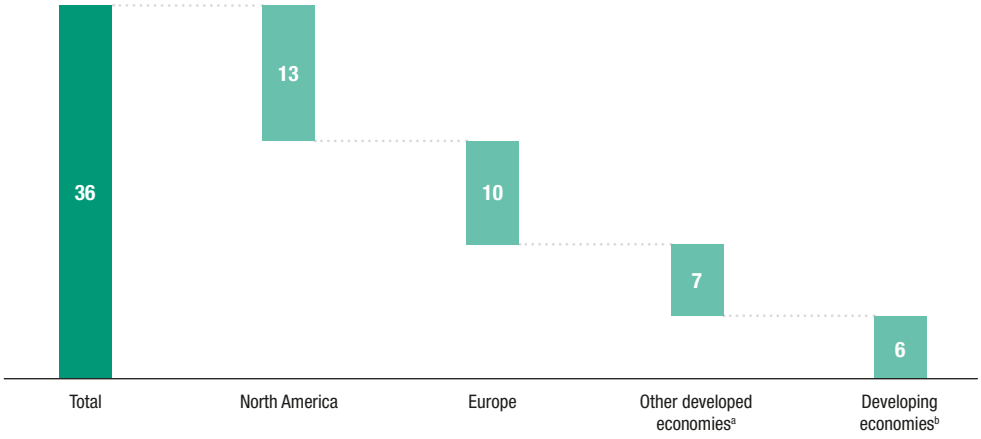
The majority of funds that have made a commitment to net-zero emissions are from North America and Europe (figure III.21). Relatively more robust regulatory environments on climate change matters in Europe and North America have helped push companies and investors to take action to reduce greenhouse gas emissions. In contrast, developing economies often have weaker environmental regulations and less developed carbon markets, which may discourage investors from prioritizing climate action.

Figure III.20. Climate-specific actions by funds, 2022



Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

Figure III.21. Number of funds with a net zero goal, by region, 2022



Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.
[a] Other developed economies includes Australia.
[b] Developing economies includes: China, Malaysia, Singapore, South Africa, Taiwan, Province of China.

UNCTAD monitoring shows that several funds are going further with their investment strategies regarding climate and stating clear, specific goals for investment and divestment. For example, 13 funds have a stated target for investment in renewable energy, and 11 funds have a stated target for divestment from fossil fuels (table III.2). Only five funds have stated targets that relate to both transitioning investment strategies (box III.4).

Table III.2. Funds with targets for renewable energy investment and fossil fuel divestment, 2022

Fund	Country	Assets under management ($ billion)	Investment in renewable energy	Divestment from fossil fuels
NBIM	Norway	1 258	-	■
APG	Netherlands	555	-	■
ABP	Netherlands	514	■	-
CalPERS	United States, California	450	■	-
CPP	Canada	377	■	-
NYSCRF	United States, New York	208	■	■
MN	Netherlands	208	■	■
OTPP	Canada, Ontario	188	■	-
AustralianSuper	Australia	178	■	-
CDC	France	175	■	■
AIMCo	Canada, Alberta	129	■	-
Aware Super	Australia	100	-	■
KLP	Norway	91	■	■

/…

Table III.2.	Funds with targets for renewable energy investment and fossil fuel divestment, 2022 (Concluded)			
PGGM	Netherlands	90		-
CDPQ	Canada, Quebec	76	-	
Temasek	Singapore	71		-
CalSTRS	United States, California	66	-	
IMCO	Canada	57	-	
Bpifrance	France	50		

Source: UNCTAD, based on latest fund reporting (2022); some latest reports from 2021.

Box III.4. Examples of fund target-setting for sustainable energy investment and fossil fuel divestment

The *NYSCRF* Climate Action Plan proposes to increase investment in renewable energy by $20 billion over 10 years and to transition investment away from fossil fuels and towards low-carbon options.

MN aims to divest from all coal mining companies by 2025 and has already divested from most of these companies.

CDC plans to invest €60 billion in the ecological transition by 2024, corresponding to about 15 per cent of France's National Low Carbon Strategy. The fund has also committed to phasing out by 2030 investment in companies that derive more than 10 per cent of their revenue from coal mining or coal-fired power generation.

KLP has committed to increase substantially the share of renewable energy in its global energy mix under goal 7.2 of the SDG framework.

BPI France, in its Climate Action Plan, has specifically stated its goal to accelerate ecological and energy transition and outlined criteria for excluding thermal coal.

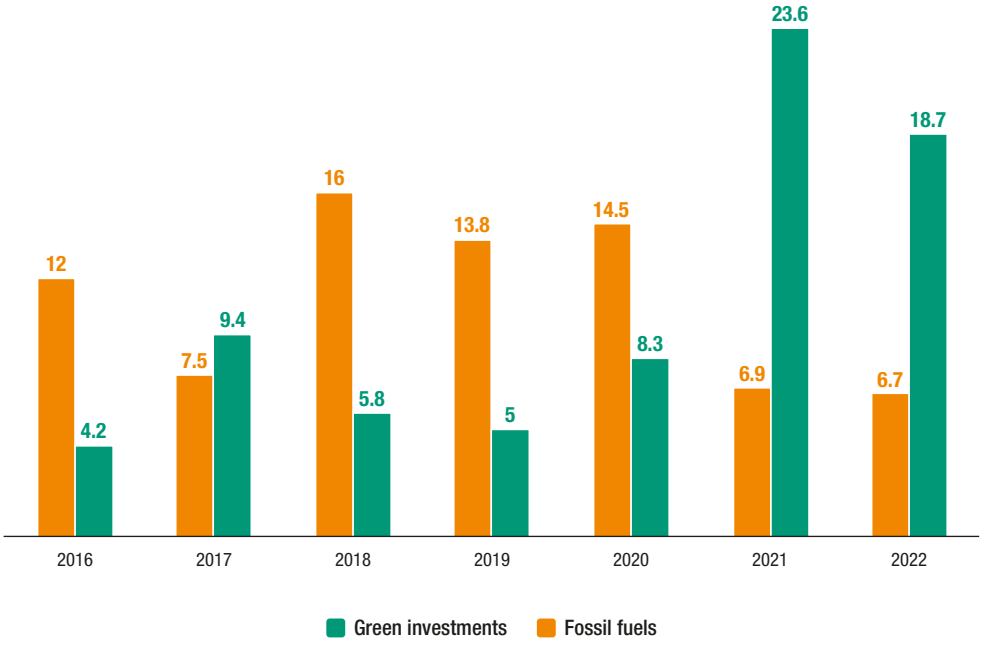
Source: UNCTAD, based on fund reporting.

b. Investing in the energy transition

As part of efforts to mainstream climate issues in their sustainability strategies, PPFs and SWFs have been directing more of their assets towards the energy transition. Renewable energy has become an attractive infrastructure subsegment for these institutional investors, offering the stable, inflation-hedging qualities of infrastructure while supporting net-zero objectives. With a long-term investment horizon, SWFs and PPFs are uniquely positioned for investing in infrastructure and energy, including the renewable energy sector, and have become important investors in the sectors.

Between 2016 and 2022, PPFs and SWFs significantly increased their investment in renewable energy, driven by policy changes aimed at decarbonizing, the continuously decreasing costs of renewables and the need for portfolio diversification. In 2022, these funds invested $18.7 billion in renewable energy projects, which is a 21 per cent decline from 2021 but still almost double the annual average since 2016. In contrast, their annual investment in oil and gas projects has declined from the peak of $16 billion in 2018 to $6.7 billion in 2022 (figure III.22).

Figure III.22. **Fossil fuel investments and green investments by sovereign wealth funds, 2016-2022** (Billions of dollars)



Source: UNCTAD, based on Global SWF, January 2023.

Canadian pension funds were the largest source of capital for investing in renewable energy, accounting for 33 per cent of total investment in 2022. Gulf investors contributed 29 per cent, and Singaporean funds accounted for 26 per cent; GIC (Singapore) was the largest single investor, followed by Mubadala (United Arab Emirates). Gulf SWFs are important investors in renewable energy, as they seek to diversify domestic and regional economies and progress towards the Paris Agreement goals.

North America and Europe are the most popular destinations for renewable energy investment, due in part to the level of opportunity and the positive regulatory environment for renewables and in part to FDI attraction efforts in certain countries. However, investment in renewables in developing economies, especially in the least developed ones, has been limited, despite the significant need and potential. Several barriers, including the lack of bankable projects and necessary supportive policies, as well as perceptions of high risk, must be overcome in order to unlock long-term institutional investment in renewable energy in developing economies (chapter IV).

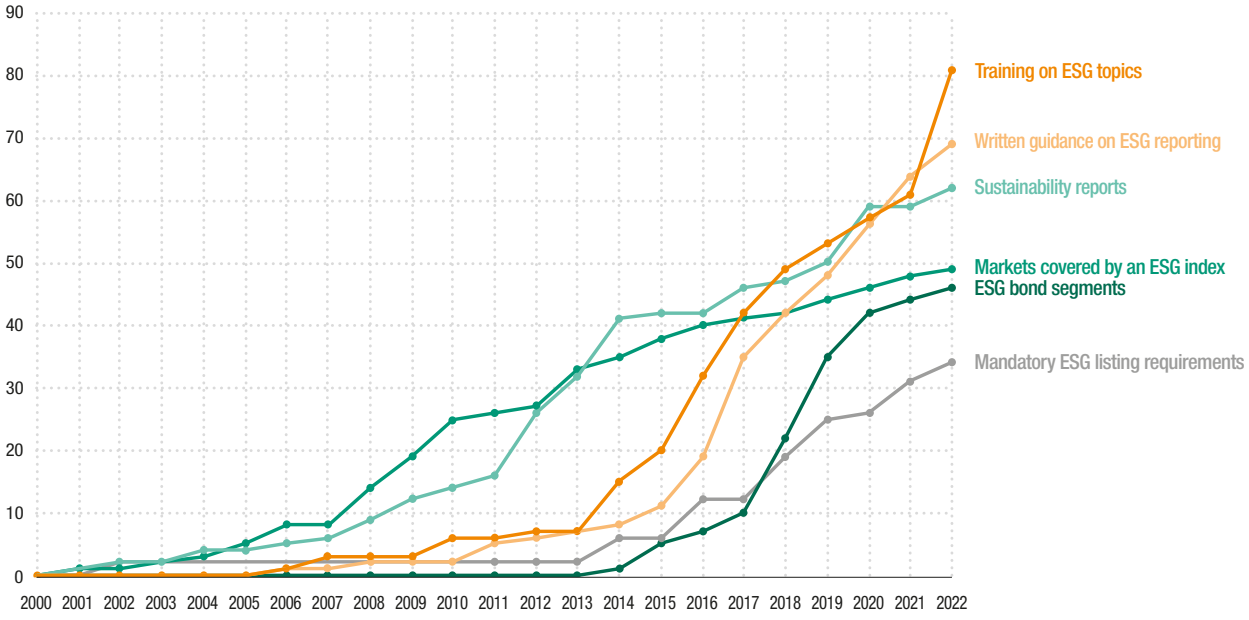
C. STOCK EXCHANGES AND MARKET INFRASTRUCTURE

Stock exchanges continue to provide support for sustainable finance, with increases across the board in the number of exchanges that have written ESG disclosure guidance, mandatory ESG reporting, ESG training, and related bond and equity offerings. As sustainable finance increasingly becomes the subject of regulation and standardization, education for market participants becomes critically necessary so that they can keep up with rules and standards. In 2022, training on ESG topics became the most common sustainability activity of exchanges, fuelled in part by the activities of the UN SSE initiative, which works with development partners and exchanges to train market participants.

1. Stock exchange sustainability trends

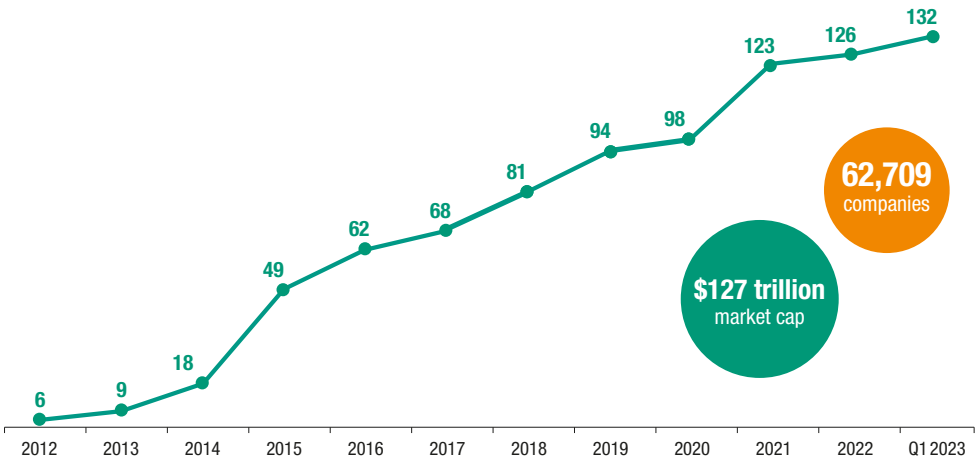
Over the past 20 years, stock exchanges have continued to integrate sustainability-related activities into their operations (figure III.23). The number of exchanges with written guidance on ESG reporting continues to grow, from fewer than 10 a decade ago to 69 – more than half of the world's exchanges – at the end of 2022. Likewise, the number of markets that are subject to mandatory ESG listing requirements has grown from close to zero a decade ago to over a quarter of markets today; the continuation of this trend will support the achievement of SDG 12.6 on the integration of sustainability reporting in annual corporate reporting. The most significant jump in activities in 2022 related to the number of exchanges that provide training on ESG topics to market participants, which rose from 61 in 2021 to 81. Key instruments supporting these trends are analysed in more detail in section III.C.3.

Figure III.23. Stock exchange sustainability trends, 2000–2022 (Number of exchanges)



Source: UNCTAD, SSE database.

Figure III.24. SSE initiative members, 2012–Q1 2023 (Number of exchanges)

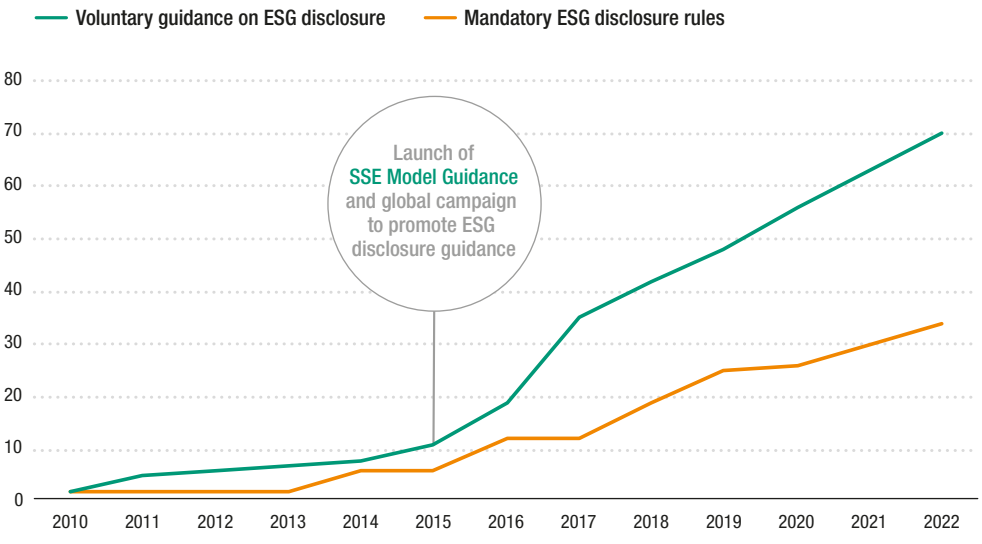


Source: UNCTAD, SSE database.

2. Sustainable Stock Exchanges initiative

When the UN SSE initiative launched in 2009, it started with five founding signatories. Since then, its network has grown to include most of the stock exchanges (119) and many of the derivatives exchanges (13) around the world. The former collectively list more than 62,709 companies, with a combined market capitalization of more than $127 trillion (figure III.24). The continuous growth of the network indicates the heightened importance of ESG topics for exchanges, their listed issuers and other key stakeholders. The SSE offers its members a platform for learning and collaborating with capital market regulators, investors, issuers and financial service providers to address ESG topics and stay up to date on global best practices related to sustainability goals.

Figure III.25. Global trend in ESG disclosure rules and guidance (Number of exchanges)



Source: UNCTAD, SSE database.

3. ESG disclosure: stock exchange guidance, listing requirements, standards adoption and market education programmes

Stock exchanges play an important role in helping markets navigate ESG disclosure standards. By the end of 2022 the number of exchanges that provide written guidance to issuers on reporting sustainability information had reached 67, up from just 13 in 2015, when the UN SSE launched its global campaign and model guidance to encourage exchanges to provide guidance on sustainability reporting (figure III.25).

The growth trend in mandatory ESG disclosure rules continued in 2022, with 34 markets now subject to rules on sustainability reporting, up from 30 the year before. Given current trends, SDG 12.6 on sustainability reporting remains on track to be achieved by 2030.

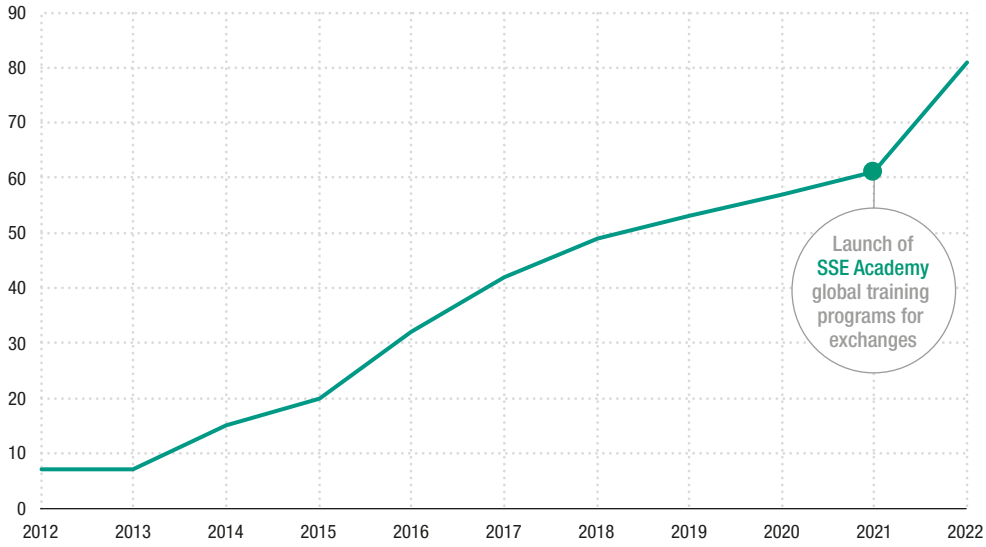
Stock exchanges continue to promote international ESG disclosure instruments (figure III.26). The instrument most commonly referenced is the GRI Standards, followed by standards and guidance produced by the SASB and the International Integrated Reporting Council, which are each referenced in about three quarters of guidance documents. Climate-specific reporting instruments such as the recommendations of the Financial Stability Board's TCFD and the Carbon Disclosure Project are referenced by over half of the guidance, and about a third reference the work of the Carbon Disclosure Standards Board. It is important to note that the SASB, the International Integrated Reporting Council and the Carbon Disclosure Standards Board are all now elements within the new International Sustainability Standards Board (ISSB) of the International Financial Reporting Standards (IFRS) Foundation. The ISSB is also building its climate standard on the basis of the recommendations of the TCFD. Thus, the marketplace continues to evolve toward a more limited and focused number of standards.

As ESG disclosure becomes codified in standards and regulations, market education programmes become critically important to assist preparers of reports with the practical implementation of these standards and regulatory requirements. Exchanges around the world are responding to this situation by expanding their provision of education and training on ESG-related topics. To support exchanges in these activities, the UN SSE launched the SSE Academy in 2021, to work with development partners in support of stock exchanges' training activities; this resulted in a further acceleration of training activities by exchanges on sustainability topics (figure III.27).

Figure III.26. **ESG reporting instruments referenced in stock exchange guidance, as of Q1 2023** (Per cent of guidance documents referencing the instrument)

Source: UNCTAD, SSE database.
Note: CDP = Carbon Disclosure Project, CDSB = Climate Disclosure Standards Board, GRI = Global Reporting Initiative, IIRC = International Integrated Reporting Council, SASB = Sustainability Accounting Standards Board, TCFD = Task Force on Climate-Related Financial Disclosures.

Figure III.27. **Stock exchanges providing sustainability training, 2012-2022**
(Number of exchanges)



Source: UNCTAD, SSE database.

Throughout 2021 and 2022, the SSE Academy, working with exchanges, development partners and subject matter experts, facilitated more than 220 hours of training for more than 20,000 participants. By working with key development partners such as the International Finance Corporation and the Carbon Disclosure Project, the SSE Academy has created a global support network for market participants. The main topic of training of the SSE Academy during this period was climate-related financial disclosures, in alignment with the recommendations of the Financial Stability Board's TCFD. Launched in 2017, the TCFD's recommended disclosures have become a globally recognized baseline framework for climate-related financial disclosures and the basis for the IFRS Foundation's climate standards, developed by the ISSB. Given the fast pace of advancements in ESG disclosure, training and education have become essential to achieving widespread adoption and implementation.

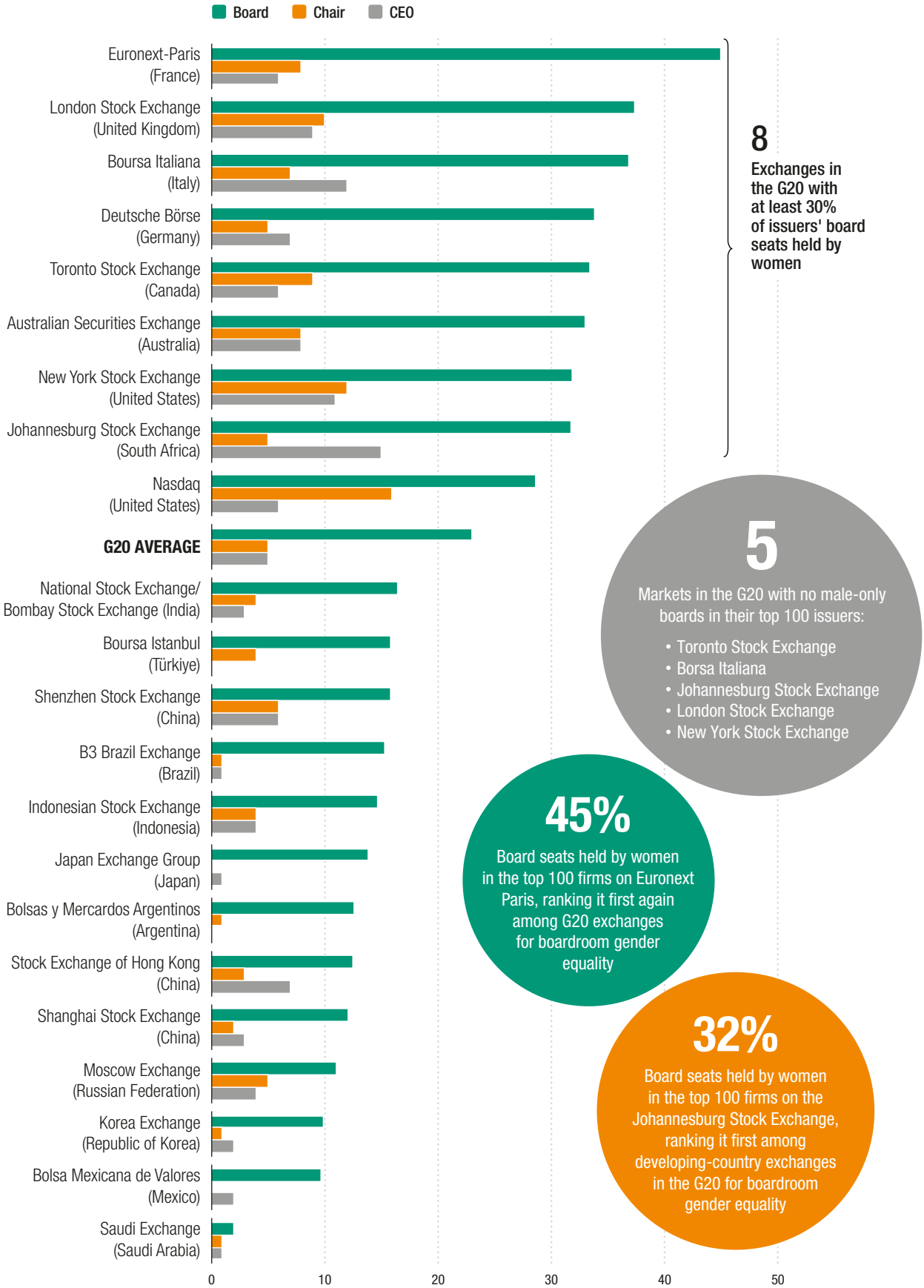
4. Advancing gender equality

a. Gender equality in corporate leadership

Every year, on International Women's Day, more than 100 SSE member exchanges around the world host "Ring the Bell for Gender Equality" events to raise awareness of the pivotal role that the private sector can play in advancing gender equality to achieve SDG 5. Despite the growing number of exchanges that promote gender equality among their listed companies, the number of women in high-level positions within companies remains low in many markets (figure III.28). Women hold 23 per cent of the 21,561 board seats of the top listed companies on 22 major G20 stock exchanges, on the basis of data collected in 2022 (UN SSE and IFC, 2022). That is a 1.3 percentage point improvement year on year, with 18 exchanges seeing an increase in the number of women on their issuers' boards, and only 4 seeing a decrease. In seven of the G20 markets, policymakers have created mandatory rules regulating the minimum number of women required on boards of listed companies.

Figure III.28. **G20 stock exchanges by gender balance of issuers' boards**

(Per cent of positions held by women among top 100 issuers by market capitalization)



Source: UN SSE and IFC (2022), Market Monitor: Gender equality in corporate leadership – G20 exchanges.

b. Investing vehicles with a gender lens

Increasingly, investors are utilizing new investment vehicles and mechanisms that apply a gender lens to investment decision-making. These include products such as gender-themed bonds, gender-lens ratings or benchmarks, and gender-themed equity indices that exchange-traded funds, mutual funds or other equity or derivative products can track. Estimates of the quantity of investment that utilizes a gender lens vary, but all show substantial increases in recent years. Investment through structured private equity, venture capital and private debt funds with a labelled gender lens exceeded $6 billion in 2020, according to estimates by Wharton University's Social Impact Initiative and Catalyst at Large (Catalyst at Large, Wharton Social Impact Initiative, 2021). Taking into account public funds in addition to those analysed by Wharton's Project Sage, the magnitude of gender-lens investing was estimated to be in excess of $12 billion in 2020 (Gender Smart, 2021). The 2X Challenge, an initiative launched at the 2018 G7 Summit, committed and mobilized $11 billion in capital for investment in women and called for the G7 and development finance institutions and private sector investors globally to collectively mobilize $15 billion from 2021 to 2022.[8] In other thematic investment vehicles, such as green bonds and carbon credits, gender-lens "co-benefits" are also being integrated. Using 2018 data, the US SIF (the Forum for Sustainable and Responsible Investment) found that asset owners with approximately $868 billion in assets under management were taking into consideration gender-lens issues in investment decisions (US SIF, 2020).

As with estimates of the amount of investment that uses gender-lens considerations, the methodology used to apply a gender lens to investment decisions varies greatly, as most mechanisms incorporate a wide range of considerations into their investment strategies. Whereas the majority of research and dialogue on gender equality in businesses focuses on the leadership level, investors are increasingly looking at additional factors for indicators of a gender-balanced company. For example, the Euronext Gender Equality Indices launched in November 2022 have four categories of evaluation: (i) gender balance in leadership and workforce; (ii) equal compensation and work-life balance; (iii) policies promoting gender equality; and (iv) commitment, transparency and accountability. Although the balance of genders at the top is still a key factor in Euronext's gender equality indices, other factors are evaluated equally, including the gender pay gap, parental leave, flexible work options, education and training opportunities, recruitment strategies, sexual harassment policies, supplier diversity, employee protection and commitment to women's empowerment in the workforce. This is increasingly common for gender-lens investing, where investors are looking beyond the boardroom to identify how companies are creating more equitable workplaces throughout a company's operations. Similarly, the Bloomberg Gender Equality Index, which was launched for financial sector companies in 2016, has broad criteria for evaluation: leadership and talent pipeline, equal pay and gender pay parity, inclusive culture, anti-sexual harassment policies and external brand. The index has grown from 104 companies from 10 sectors headquartered in 24 countries and regions to 484 companies from 45 countries and regions, across 11 sectors and 54 industries.

D. POLICIES, REGULATIONS AND STANDARDS

Countries remained active in regulating sustainable finance in 2022, with the number of regulations increasing to 388 among the 35 economies monitored by UNCTAD, particularly on the topics of taxonomies, sustainability disclosure, sector-specific rules and carbon pricing. This signals the growing importance of the regulatory environment for effecting change on climate and on the sustainable finance market. At the same time, the proliferation of regulations on sustainable disclosure has led to other problems, including a lack of comparability and standardization across markets and sectors. However, those problems are provoking action at the international level, with efforts by IOSCO to align reporting standards through the ISSB as well as widespread mandatory use of TCFD recommendations and the GRI Standards.

1. National and regional sustainable finance policies and regulations

a. Overview

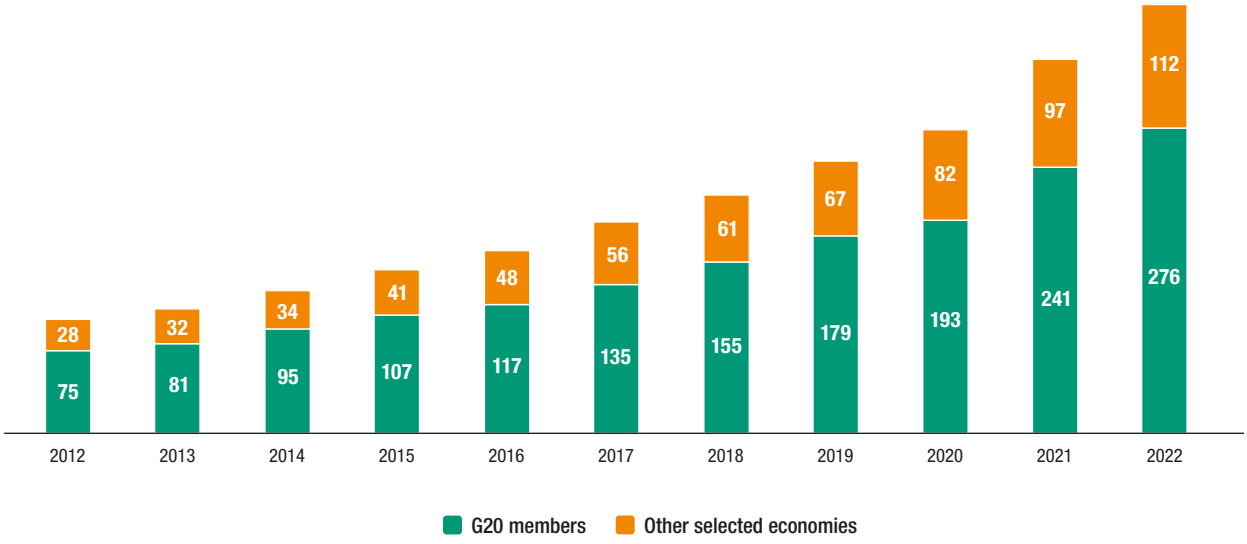
As part of the work of the UN GSFO, UNCTAD, in partnership with the PRI and the UNEP Finance Initiative (UNEP FI), has been monitoring the latest developments in sustainable finance policies and regulations in 35 economies and country groupings. These include the G20 member states (including the EU) and Switzerland, as well as 13 developing economies (Bangladesh, Chile, Colombia, Egypt, Hong Kong (China), Kenya, Malaysia, Nigeria, the Philippines, Singapore, Thailand, the United Arab Emirates and Viet Nam) and the Association of Southeast Asian Nations (ASEAN).

The current architecture of sustainable finance policy and regulation is built around seven areas identified by UNCTAD: national strategy, national framework and guidelines, taxonomy, product standards, sustainability disclosure, sector-specific regulations and carbon pricing. Policymaking activities have been observed across all seven areas in the 35 economies. The priority is to improve market clarity and credibility and to address sustainability-washing concerns. This is being achieved primarily through the development of national sustainable finance taxonomies and standards, as well as greater requirements for sustainability disclosure.

In 2022, according to the GSFO's Sustainable Finance Regulation Platform, economies tracked by the platform introduced at least 50 sustainable finance-dedicated measures, including a number of measures adopted by the EU at the regional level. This brought the total number of all regulations and policy measures in force to 388 by the end of 2022 (figure III.29). In addition, more than 50 measures are under development in these economies.

The majority of the 35 economies already have in place either a national sustainable finance strategy, framework or guidelines on sustainable finance, or fiscal, financial and administrative measures to support the growth of sustainable finance and the development of relevant products, such as green bonds (*WIR22*). Measures addressing sustainable finance disclosure and sector-specific regulations concerning asset management, sustainable banking and insurance together represent about 70 per cent of all measures. However, policymaking is currently most active in taxonomy and carbon measures, which account for a significant portion of new policies developed.

Figure III.29. **Sustainable finance policy measures and regulations in selected developed and developing economies, 2012–2022** (Number of measures)



Source: UN Global Sustainable Finance Observatory (GSFO.org), based on UNCTAD, PRI and World Bank data.
Notes: The scope of regulations and policy measures encompasses seven key policy areas for sustainable finance: national strategy, national framework and guidelines, taxonomy, product standards, sustainability disclosure, sector-specific regulations and carbon pricing. Other selected economies and territories include Switzerland, as well as 13 developing economies (Bangladesh, Chile, Colombia, Egypt, Hong Kong (China), Kenya, Malaysia, Nigeria, the Philippines, Singapore, Thailand, the United Arab Emirates and Viet Nam), and ASEAN. Relevant measures of the EU are included in the number for the G20. The number of policy measures in 2021 was updated to include incentive-related measures.

Broadly, the EU, China and the United States have taken two different approaches to sustainable finance regulation. The EU has predominantly adopted a regulatory approach, prioritizing the establishment of a comprehensive regulatory framework for sustainable finance. The EU's policy measures and frameworks have been used as a reference for sustainable finance policymaking in other countries. For example, the EU taxonomy, based on the principles of "substantial contribution" (to sustainable objectives) and "do no significant harm", has served as a useful model for other economies, such as ASEAN and South Africa, in developing their taxonomies.

China and the United States have so far pursued a hybrid approach, attaching importance to both regulation and the integration of both climate and sustainable development dimensions into industrial policies. In 2022, the United States passed into law the Inflation Reduction Act, with a focus on green investment.[9]

b. Latest developments in 2022

In 2022, significant progress was made in most policy areas, but most notably in taxonomy development, sustainability disclosure, sector- or product-specific measures, and carbon pricing (table III.3).

Table III.3. Sustainable finance policy measures and regulations introduced in selected countries, 2022

Economy	National strategy or framework	Taxonomy	Sustainability disclosure	Sector-specific measures[a]	Product-specific measures[b]	Carbon pricing
Australia		■	■			
Bangladesh			■	■	■	
Brazil				■		
China			■	■		
Colombia		■	■	■		
Egypt				■		
European Union		■	■	■		■
France			■			
Germany			■			
India			■			
Indonesia		■				
Italy			■			
Japan	■		■			
Malaysia			■	■	■	
Netherlands				■		
Philippines	■				■	
Russian Federation				■	■	
Singapore			■		■	
South Africa		■		■		
Türkiye				■		
United Kingdom			■			
United States			■	■		

Source: GSFO Sustainable Finance Regulations Platform (https://gsfo.org/sustainable-finance-regulations-platform).
Note: Measures under development are not included.
[a] Includes sustainable banking, insurance, investment and credit ratings.
[b] Includes sustainable funds and bonds.

(i) Taxonomies

Countries continued pushing ahead with their sustainability codification efforts by developing taxonomies to define what economic activities are considered environmentally or socially sustainable. In February 2022, the EU Platform on Sustainable Finance, an expert group advising the European Commission on taxonomies and related policies, produced its final report on the framework of the EU social taxonomy. Although the final deliberations on the social taxonomy by the European Commission may be delayed towards 2024, the release of the framework represents a milestone in the EU's sustainable finance strategy by laying out the structure of a classification system for socially sustainable economic activities that can contribute to social equality and to the improvement of human rights. Meanwhile, Australia, Colombia, Indonesia and South Africa released or adopted their own sustainable finance taxonomies. By the end of 2022, 10 of the 35 economies monitored by the GSFO platform had adopted a national taxonomy, and 11 others were in the process of developing one.

(ii) Sustainability disclosure

Sustainability disclosure remained the most active area of policymaking in sustainable finance. In 2022, 14 economies covered by the GSFO database introduced 19 such measures, representing 40 per cent of all newly adopted measures. Most notably, the Council of the European Union adopted the Corporate Sustainability Reporting Directive, which entered into force in January 2023 (box III.5). It requires all large companies listed on regulated markets to report on ESG and human rights activities, taking effect in three stages from 2024 to 2026, starting with companies already subject to the Non-Financial Reporting Directive and moving to listed small and medium-sized enterprises (SMEs).

A number of developing economies, including Bangladesh, China, Egypt, India and Malaysia, also introduced measures to require financial institutions and companies to report on sustainability, including carbon emissions. However, disclosure measures at the product level remained rare in 2022. The EU and Singapore were among the few economies that implemented new regulations on sustainability disclosure for financial products such as sustainable investment funds. In order to enhance the credibility of sustainability-themed financial products and address sustainability-washing concerns, more policymaking efforts on disclosure requirements at the product level are needed.

(iii) Sector- and product-specific measures

In 2022, economies monitored by the GSFO continued rolling out sector- or product-specific measures to support the growth of sustainable banking, insurance, investment and sustainable financial products such as sustainable bonds and green debt. Most of these measures were released by developing economies, including Bangladesh, Brazil, China, Colombia, Egypt, South Africa and Türkiye. This shows the growing interest of these countries in putting in place necessary requirements, standards and incentives to encourage the issuance of sustainability-dedicated products in key sectors that are crucial for sustainable development. Meanwhile, as part of its sustainable finance strategy adopted in 2021, the EU initiated consultation of ESG ratings and sustainability factors in the assignment of credit ratings. The objectives are to improve the quality of information for investors and other stakeholders and to enhance transparency and standardization in ESG ratings.

Box III.5. European Sustainability Reporting Standards

Pursuant to the EU's adoption of the Corporate Sustainability Reporting Directive (CSRD) legislation in November 2022, the European Sustainability Reporting Standards (ESRS) were approved by the European Financial Reporting Advisory Group (a private association funded by the EU). The ESRS had been under development since mid-2021, with draft standards circulated for comment during the second half of 2022.

The CSRD came into force in December 2022. Having the effect of updating the 2014 Non-Financial Reporting Directive, it signifies a substantial shift in the EU's sustainability reporting landscape, by expanding the number of companies required to make sustainability disclosures (from approximately 11,000 to nearly 50,000). The requirement applies to all large EU companies, companies listed on an EU-regulated market, parent EU companies (where the group meets the large company criteria) and certain non-EU companies. The ESRS will form the common framework according to which disclosure must take place.

Implementation of the ESRS is nearing the final stages, with reporting requirements being phased in over time. The largest companies will have to apply the standards from the 2024 financial year (for reporting in 2025), and small and medium-sized enterprises (SMEs) from 2026.

The ESRS is based on the concept of double materiality, in which a company reports both on how sustainability matters affect the company's financial performance and prospects (inward-looking) as well as how the company's business activities affect society and the environment (outward-looking). The Standards currently cover general principles and topical standards across ESG matters. Sector-specific and proportional standards will follow in due course.

Source: UNCTAD.

(iv) Carbon pricing

Carbon pricing is another important policy area for sustainable finance (section III.A). At the end of 2022, 15 of the 35 economies covered by the GSFO platform had put in place carbon trading schemes or carbon emission taxes. Similar measures are under development in another 11 countries, including Brazil, Chile, Colombia, Indonesia, Indonesia, Japan, Malaysia, Nigeria, Thailand, Türkiye and Viet Nam. In December 2022, the European Commission, the European Parliament and the Council of the EU reached a provisional agreement on the "Fit for 55" package, which includes a significant reform of the EU Emissions Trading System. The deal includes a more ambitious reduction target of 62 per cent for the sectors in the system by 2030; the phase-out of free allocation in some sectors, accompanied by the phase-in of the carbon border adjustment mechanism; expansion of the system to cover maritime shipping; creation of a separate system for buildings, road transport and other fuel sectors; and the use of ETS revenues to address distributional effects and spur innovation. Under the carbon border adjustment mechanism, importers of goods in certain sectors would have to pay any price difference between the carbon price paid in the country of production and the price of carbon allowances in the system.

From national and regional policymaking practices, three important trends have emerged that could transform the global landscape of sustainable finance regulation in the coming years.

First, policymakers have realized the importance and urgency of putting together an integrated and coherent national framework for sustainable finance, as exemplified by the large numbers of national strategies, taxonomies and policy frameworks released and under development. These national strategies and frameworks usually require policy changes across financial, fiscal, industry, technology, social and other policies. They usually cover corporate disclosures, investor duties and disclosures, taxonomies, standards and broader sustainable finance measures (e.g. carbon pricing, stewardship regulations) (PRI, 2022).

Second, the move from voluntary to mandatory disclosure is accelerating. In 2022, over 80 per cent of disclosure measures at the national and regional levels imposed mandatory actions. This trend is expected to continue in view of the need to shift the baseline for all market players to report on sustainability with credible and comparable data.

Third, policymakers are shifting focus from risk management to impact generation, with policies giving more emphasis to the sustainable impact or outcome of investment decisions. In this context, many economies have released sector-specific policies to encourage investment in sustainable economic activities through sustainable banking, insurance and investment. In addition to these sector-specific policies, policymakers can also consider encouraging investing in impact through legal reforms (such as reform of investor stewardship and other duties) (PRI, The Generation Foundation and UNEP FI, 2021).

c. Sustainable finance incentives

While making efforts to create a viable regulatory framework for sustainable finance, countries also use incentives as an important policy tool to jump-start the sustainable finance market or to support its growth. Incentives can take different forms, including financial, fiscal and administrative incentives (for example by streamlining administrative procedures and making investing or product issuance easier). The use of sustainable finance incentives is most prevalent in support for the development and issuance of sustainable financial products – in particular green or social bonds but also other financial products (box III.6) – across the 35 economies or country groupings covered by the GSFO platform.

Box III.6. The Netherlands: Green Funds Scheme

Governments can also utilize incentives to encourage investment in sustainable financial instruments. One example is the Green Funds Scheme of the Netherlands, which offers a combination of tax credit and tax exemption to both institutional and individual investors who invest in green funds, as defined by the ministries of Environment, Finance and Agriculture. The interest rate for investors is lower than market rates, enabling banks to offer cheaper loans to green projects. This lower interest rate is then offset by a tax credit and exemption of taxes on dividends and interest payments.

The programme provides secure investments for investors while reducing finance costs for eligible environmentally friendly projects. Since its implementation in 1995, individual investors alone have invested more than €6.8 billion in green funds, funding more than 5,000 projects.

Source: UNCTAD.

In 2022, Brazil released a decree extending tax reduction for investment in social or green bonds in qualified projects to both individual and corporate investors. This policy resulted in a significant increase in the issuance of green and social bonds in the country, with over $11 billion worth issued in the second half of the year.

Hong Kong (China), in its 2021–2022 budget, announced a three-year Green and Sustainable Finance Grant Scheme to provide subsidies for eligible bond issuers and loan borrowers to cover part of their expenses for bond issuance and external review services. In addition, in a further effort to support the industry, the Government will lower the minimum loan size required to benefit from the subsidies offered under the scheme.

Malaysia has extended its Sustainable and Responsible Investment (SRI) Sukuk and Bond Grant Scheme – one of the first incentive structures to support green bond issuance – until the end of 2025. The scheme provides tax exemption for sukuk issuers under the SRI Sukuk Framework of the Securities Commission Malaysia. It also provides tax exemption for bonds issued in accordance with the ASEAN Green, Social and Sustainability Bond Standards. With this financial support, the scheme has encouraged more companies to finance green and sustainable social projects by issuing SRI sukuk and bonds.

In 2022, the United States Government introduced Clean Renewable Energy Bonds and Qualified Energy Conservation Bonds to support the issuance of taxable bonds by municipalities for clean energy conservation. Under these programmes, 70 per cent of the coupon from municipal bonds is provided through a tax credit or subsidy to bondholders, providing an incentive for investment in clean and renewable energy.

In the field of sustainable banking, incentives are being provided to encourage sustainable loans with a climate or social focus. For instance, the Chinese Government offers interest rate subsidies and preferential tax treatment to banks or borrowers to incentivize more lending for green projects, as proposed in its *Guidelines for Establishing the Green Financial System*. Similarly, Singapore provides grants to enhance the capability of corporations to obtain green and sustainability-linked loans, while also reducing expenses of sustainable loans through simplified procedures.

2. International regulations and standard setting

a. International Organization of Securities Commissions

IOSCO continues to work on advancing sustainability reporting and related areas including assurance and transition planning. In 2021 work began on preparing advice to the IOSCO Board about addressing the need for globally consistent, comparable and reliable standards for sustainability disclosure. The outcome of this work was strong support from IOSCO for the IFRS Foundation's ISSB. When the final IFRS sustainability standards are published, IOSCO plans to assess whether the proposed requirements can serve as an effective global baseline of investor-focused standards, whether they are fit for purpose in helping financial markets accurately assess sustainability risks and opportunities and whether they can form the basis for developing a robust audit and assurance framework.

Assurance standards are a key complement to corporate reporting standards. IOSCO began work in 2022 on assessing whether the existing sustainability assurance ecosystem is fit for purpose or whether further enhancements, including through standard setting, will be required. Strong support exists for IOSCO in coordinating and promoting global consistency for sustainability assurance standards, similarly to what it has done so far with sustainability reporting. IOSCO has engaged key stakeholder groups, including the International Auditing and Assurance Standards Board and the International Ethics Standards Board for Accountants. In the second half of 2022, the two groups indicated that they plan to engage on proposals for extensive and ambitious projects to develop assurance and ethics (including independence) standards related to sustainability reporting. In early 2023, IOSCO published a report on international work to develop a global assurance framework for sustainability reporting.

Also in early 2023, IOSCO proposed the establishment of a workstream on plans for transition to net-zero emissions. Such plans have been receiving a lot of attention globally, including from securities regulators, as they are seen as important in providing material information to investors and financial markets. The Financial Stability Board's Standing Committee on Supervisory and Regulatory Cooperation agreed, as part of its 2023 workplan, to consider ways that authorities could engage with financial institutions on their plans for net-zero transition, to understand the implications from the perspective of financial stability. The Committee decided to create a working group to develop, at a conceptual level, a deeper understanding of the role of transition plans in prudential risk management and financial stability. IOSCO work in this area will be a counterpart to the Committee's working group on transition plans once the Committee turns to policy action (expected in the second half of 2023). IOSCO plans to engage with relevant initiatives, seeking to bring the perspective of market integrity and investor protection to this work.

Capacity-building in sustainable finance is one of IOSCO's key priorities. In 2022, its efforts (delivered in collaboration with the IFRS Foundation) focused on building and launching a programme aimed at assisting regulatory authorities in their efforts to implement future sustainability reporting standards. In 2023, these efforts will continue and build on the initial phase, going beyond the importance of sustainability disclosure standards and focusing on the role of securities regulators in adopting and implementing such standards and on the enabling ecosystem. Going forward, IOSCO will consider further expanding its capacity-building programmes on corporate sustainability reporting and related areas, seeking to partner with other organizations.

b. International Sustainability Standards Board

The ISSB, formed in 2021, develops standards that will form the global baseline for disclosure of sustainability-related risks and opportunities, to meet the needs of investors and other capital market participants. International policymakers, including the members of the G7, the G20 and the Financial Stability Board, as well as capital market participants, supported the IFRS Foundation in establishing the ISSB to develop international sustainability disclosure standards that are cost-effective, market-informed and enable companies to deliver to investors comparable, consistent, disclosures useful for making decisions.

The ISSB Standards draw on a range of voluntary investor-focused standards and frameworks, including the TCFD recommendations, the CDSB Framework, the SASB Standards and the Integrated Reporting Framework. The ISSB's initial standards set out general requirements for sustainability-related financial disclosure (in ISSB Standard S1) and specific requirements on climate-related financial disclosure (in ISSB Standard S2). The Standards require entities to disclose material information about sustainability and climate-related risks and opportunities.

The Standards specify sources of guidance, such as the industry-based SASB Standards for S1 and the structure of TCFD for S2, to help companies identify their risks, opportunities and metrics. Companies are required to make disclosures about their governance and risk management of sustainability and climate-related risks and opportunities, as well as the strategy, metrics and targets used to manage those risks and opportunities.

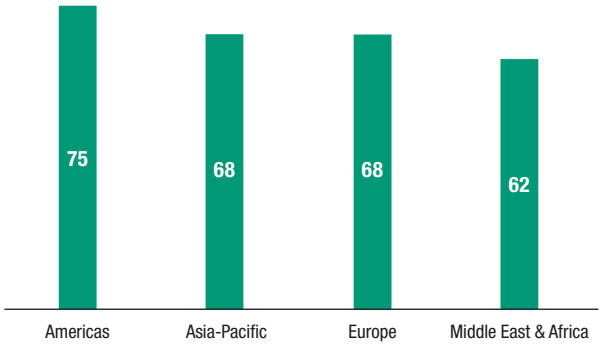
In line with the concept of providing a global baseline, jurisdictions may add building blocks to the ISSB's global baseline standards in order to meet local reporting objectives, provided that local provisions do not obscure information required by the global baseline.

The ISSB coordinates capacity-building initiatives to support adoption and implementation of the standards used by markets globally, including in developing economies, as well as for smaller companies. The ISSB has a two-tier engagement strategy, engaging with

- Market oversight institutions, including policymakers, regulators, stock exchanges and standard setters, to facilitate adoption of the ISSB Standards as the global baseline of sustainability-related financial disclosures.
- Market participants, including reporting entities, investors and professional advisers, to build expertise and practice in applying the ISSB Standards.

In 2023, the ISSB has two major activities planned. First is the launch of the ISSB Standards, S1 and S2, at the end of Q2 2023. Second is conducting public consultations on enhancing the international applicability of the SASB Standards and a Request for Information about future priorities. Responses to the Request for Information will guide the ISSB's future standard-setting agenda and priorities.

Figure III.30. **Adoption of GRI by companies, by region** (Per cent of companies)



Source: KPMG (2022).

c. Global Reporting Initiative

The GRI Standards are widely used for corporate reporting on sustainability impacts (figure III.30) (KPMG, 2022). They are also frequently referenced in stock exchange guidance documents on sustainability reporting. The revised Universal Standards that were approved in 2021 came into

operation in January 2023. To keep the standards relevant and up to date, the GRI's Global Sustainability Standards Board sets out a new work programme every three years. For 2023–2025, the GRI will continue its work to not only review existing standards, but also continue developing new topic and sector standards.

d. Interoperability and consistency in international sustainability reporting standards

Since March 2022, the GRI's Global Sustainability Standards Board and the ISSB have worked together under a memorandum of understanding to coordinate work programmes and standard-setting activities. The GRI has also actively engaged in the development of the EU's ESRS, from the initial phases through collaboration with the European Financial Reporting Advisory Group and the Technical Expert Group. The work targeted the achievement of optimal interoperability between the GRI Standards and the ESRS.

These efforts recognize the benefits of further harmonizing the reporting landscape at the international level. The GRI Standards address an organization's impacts on the economy, environment and people, to meet the information needs of a multi-stakeholder audience, whereas the standards being created by the ISSB focus on the information needs of investors and other capital providers. The IFRS Sustainability Disclosure Standards and the GRI Standards can be viewed as two interconnected reporting approaches that take distinct but complementary perspectives, together forming a comprehensive corporate reporting system for the disclosure of sustainability information. The continued GRI-ISSB collaboration commits both organizations to ensure that their respective standards are compatible. This will give assurance to reporting companies while supporting the transparency that investors and other stakeholders require.

With the proliferation of national regulations and policy measures, the lack of interoperability and consistency in national sustainability reporting requirements remains a challenge. To alleviate this issue, countries could use a building block approach and implement ISSB standards as a baseline (block 1) together with additional national requirements that satisfy local needs (block 2). Or they could use as block 2 one of the existing and accepted standards such as those developed by the GRI to complement disclosure and ensure that companies use a double materiality approach and provide information for a wider set of users and stakeholders (IFRS Foundation, 2022). The EU and the United States are developing their own sustainability reporting requirements and working with the ISSB to achieve interoperability.

UNCTAD, through its Intergovernmental Working Group of Experts on International Standards of Accounting and Reporting, is supporting countries in reinforcing their regulations and institutions and building human capacity to implement the ISSB standards. For this purpose, UNCTAD continues gathering examples, best practices and lessons learned in sustainability reporting from various countries and regions. UNCTAD and the Intergovernmental Working Group are also identifying the challenges and needs of developing countries to convey them to the ISSB and ensure that those needs are taken into consideration in the development of new standards. To maximize progress in and support for developing countries, UNCTAD created regional partnerships for the promotion of sustainability and SDG reporting in Africa (50 members from 26 countries) and Latin America (29 members from 14 countries) and is working to establish two more partnerships, one in Asia and one in the Gulf region. The partnerships are a vehicle for facilitating the exchange of good practices in the implementation of sustainability reporting standards. They enable consultations among peers, help to identify technical assistance needs and provide a regional voice in interaction with international standards setters.

* * *

In 2022, the sustainable finance market (funds, bonds and VCMs) grew to $5.8 trillion, up 12 per cent from 2021. This growth was driven by a fivefold increase in sustainable bond annual issuance over the past five years, despite a decline in issuance in 2022. The turmoil in bond markets globally and the impact of inflationary expectations on the price of longer-dated products also make the relative resilience of green bond issuance (by its nature long-term) a welcome development.

The sustainable fund market experienced a retrenchment in 2022, in common with other financial markets, but remained relatively more resilient. Net inflows to sustainable funds were positive, in contrast to net outflows from traditional funds. Carbon markets saw record prices for the cost of tCO_2e in 2022, raising hopes that a more realistic price for CO_2 (and other greenhouse gases) can help drive the energy transition. Although the picture is nuanced, the overall positive trend in the sustainable finance market highlights continued investor confidence and the resilience of sustainable investment strategies.

Institutional investors continued to integrate sustainability performance and climate risk management into their investment strategies, as well as commit to net zero in their portfolios through fossil fuel divestment and sustainable energy allocation. Stock markets exerted influence over the disclosure and reporting requirements of listed companies and pushed for important changes in business practices related to the areas of, for example, climate and gender. Countries remained active in sustainable finance regulation in 2022, at the national, regional and international levels, including support for new ISSB standards, signalling the growing importance of the regulatory environment for effecting change on climate and the sustainable finance market.

Nevertheless, despite last year's resilience, the sustainable finance market continues to face a number of challenges. Chief among them is the scale and pace of market growth, which has significant implications for the energy transition. The sustainable finance market still represents a small share of the overall financial market and, despite understanding the material threats posed by climate change, investors still have a long way to go to reorient portfolios or make meaningful commitments to achieving net zero. The exposure of the market to developing countries and the development of sustainable products in these economies remains limited, and primarily concentrated in China.

The second challenge concerns the coherence between policies, standards and carbon emission prices. The proliferation of sustainability-related regulations and standards is positive but has sometimes created confusion for investors and a lack of comparability and interoperability across markets and products. Efforts at the international level, notably by the ISSB and the EU, are helping to address this problem but developing countries will need support in adapting local frameworks and requirements to international standards. Meanwhile, with regard to carbon pricing, the spread between the price of carbon in voluntary markets and that in compliance markets ranges from near $0 to almost $100, with the depth of both markets similarly polarized. Given that VCMs channel funds to sustainable investment in developing countries, it is important to support their development. The UN SSE initiative has been coordinating work in this area and could help support the expansion of VCMs.

The third challenge relates to the coverage of sustainability rules and standards, which have so far generally omitted SMEs from their scope. It is foreseeable that governments will extend reporting requirements from large companies to smaller ones (as in the case of the ESRS) and that multinationals will expand their sustainability reporting demands for companies in their supply chains to meet their own reporting needs. As a result, SMEs, particularly in

developing countries, will need technical assistance and support in this area. International institutions, such as UNCTAD's programme on International Standards of Accounting and Reporting, can be of help in this respect.

A fourth challenge remains the quality assurance of markets and products to minimize greenwashing and any backlash associated with it. UNCTAD's analysis finds that a significant share of sustainable funds' ratings falls short of the benchmark index, while the carbon content of "green funds" can be, at best, confusing for investors and, at worst, misleading. The UN GSFO and other international programmes, therefore play an important role in monitoring the market and helping to drive more transparent disclosure and reporting.

With just seven years left for countries to reach a 45 per cent reduction in CO_2 emissions above 1990 levels, in accordance with their obligations under the Paris Agreement, a greater push is needed to change investment patterns and economic development, especially in light of the increase in global energy-related CO_2 emissions in 2022. In this context, the role of education (on sustainability integration and disclosure) and training is critical, including in developing countries. UNCTAD's sustainable finance programmes offer a range of training opportunities and educational tools and resources for investors and policymakers. UNCTAD will also continue to monitor the sustainable finance market, including investment in the energy transition, through its coordination of the UN GSFO and the UN SSE initiative, as well as mapping the actions of investors and regulators, in order to inform policymaking and discussions on sustainable investment.

NOTES

1 The sustainability rating is based on the average of leading ESG ratings available in the market and in this sense reflects the "consensus" of the market (UNCTAD, 2021). The score is a relative rating, with 10 for the highest rated funds and 1 for the lowest rated ones.

2 The MSCI ACWI covers about 3,000 holdings from 23 developed and 27 emerging markets and approximately 85 per cent of the free float-adjusted market capitalization in these markets. The index is the benchmark against which the relative sustainability performance of sustainable funds is evaluated in this section.

3 The sustainable debt market is primarily composed of use-of-proceeds bonds. They include any type of debt instrument from which the net proceeds are used exclusively to finance, in part or in full, eligible green or social projects. There are three main subcategories: (a) green bonds, which are instruments that raise funds for projects that have environmental benefits in accordance with the SDGs such as climate action (SDG 13), affordable and clean energy (SDG 7), and sustainable cities and communities (SDG 11); (b) social bonds, which are instruments that raise funds for projects that address or mitigate a specific social issue and/or seek to achieve positive social outcomes, such as improving food security and access to education, health care and financing, especially but not exclusively for target populations; (c) mixed-sustainability bonds, which are instruments that raise funds for projects that have both environmental and social benefits. In addition to use-of-proceeds bonds, sustainability-linked bonds are a new and growing product class within the sustainable bond market that can be useful for corporations for funding their sustainability transitions. Unlike established green and social bonds, sustainability-linked bonds come with no constraints on how the proceeds can be used. Instead, they are based on predefined sustainability or ESG objectives set by the issuer, which links this guarantee directly to the coupon paid to investors.

4 Additionality requires that the reductions achieved by a project be "additional" to what would have happened if the project had not been carried out. Only carbon credits from projects that are additional to the business-as-usual scenario represent a net environmental benefit.

5 Amar Inamdar, "Carbon credits and the energy transition: An investor perspective", Climate Champions, 7 November 2022.

6 According to data from Global SWF: https://globalswf.com.

7 "The dangers of asset managers when it comes to long-term infrastructure", *Financial Times,* 17 April 2023.

8 2X Challenge, https://www.2xchallenge.org.

9 The International Platform on Sustainable Finance has conducted a comprehensive assessment of the EU and China taxonomies and developed a "common ground taxonomy", which identified the commonalities and differences of the two approaches and could serve as a reference for other jurisdictions to consider when developing their own taxonomies. See https://finance.ec.europa.eu/system/files/2022-06/220603-international-platform-sustainable-finance-common-ground-taxonomy-instruction-report_en.pdf.