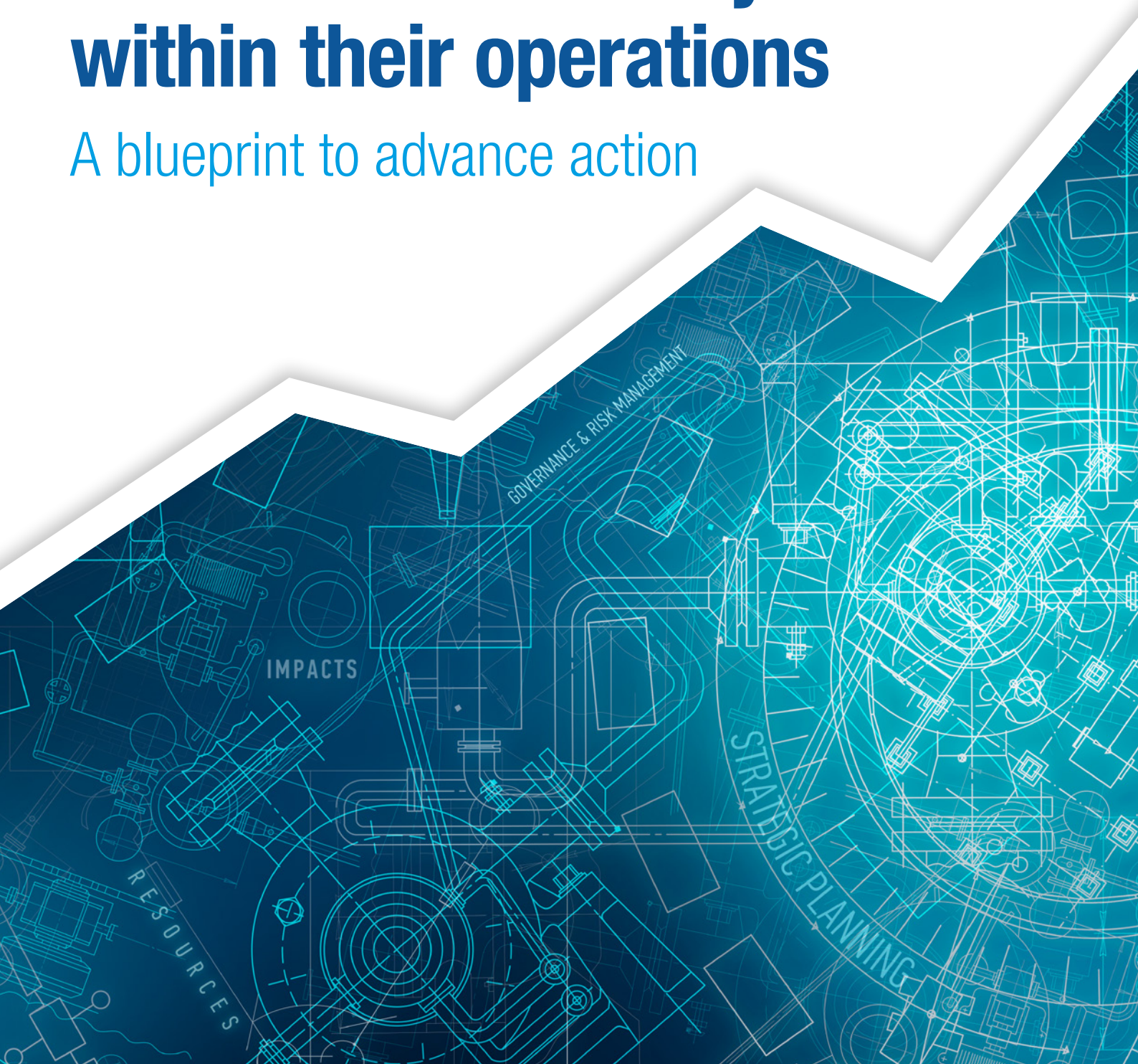
Sustainable Stock Exchanges

WORLD FEDERATION OF EXCHANGES

How exchanges can embed sustainability within their operations

A blueprint to advance action




GOVERNANCE & RISK MANAGEMENT
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Corli Le Roux played a crucial role in conducting research and drafting text, as well as coordinating inputs to the document, organising its layout and assisting with its overall production.

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The views expressed in this paper are those of UNCTAD, UN Global Compact, UN Environment, the PRI and the WFE unless otherwise stated; the paper does not necessarily reflect the official views of individual members of the advisory group or their respective organisations.

The manuscript was edited by Mark Nicholls (MRG Comms). The report was typeset and the charts and infographics designed by Pablo Cortizo (UNCTAD).

ABOUT THE SSE

The SSE initiative is a UN Partnership Programme organised by UNCTAD, the UN Global Compact, UNEP FI and the PRI. The SSE's mission is to provide a global platform for exploring how exchanges, in collaboration with investors, companies (issuers), regulators, policy makers and relevant international organisations can enhance performance on environmental, social and corporate governance issues and encourage sustainable investment, including the financing of the UN Sustainable Development Goals. The SSE seeks to achieve this mission through an integrated programme of conducting evidence-based policy analysis, facilitating a network and forum for multi-stakeholder consensus-building, and providing technical assistance and advisory services.

ABOUT THE WFE

The WFE is the global industry group for exchanges and clearing houses around the world, representing over 250 market infrastructures ranging from those that operate the largest financial centres to those that run frontier markets. Founded in 1961, the Federation was set up to contribute to the development, support and promotion of organised and regulated securities markets in order to meet the needs of the world's capital markets in the best interests of their users.

EXECUTIVE SUMMARY

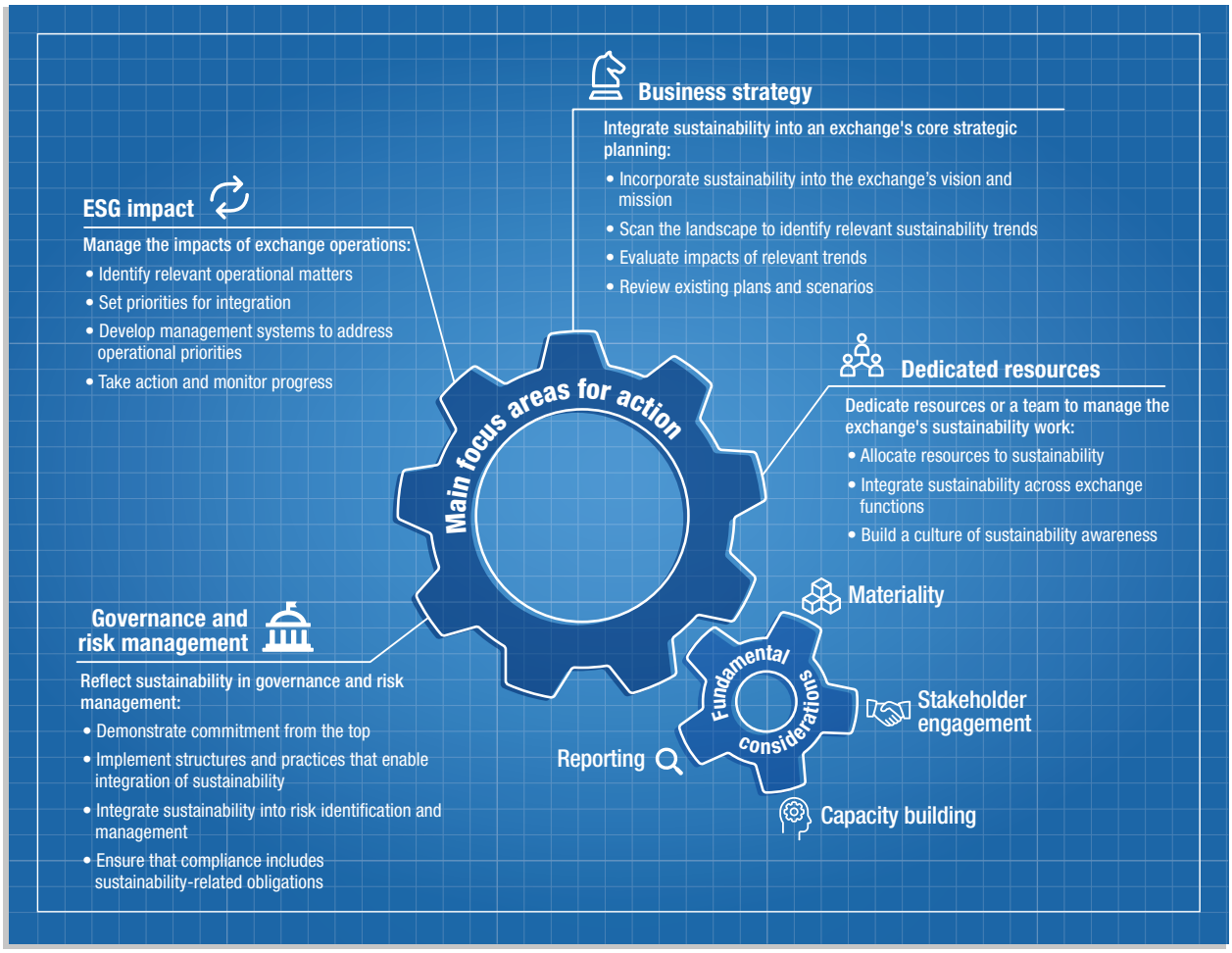
Ten years after the launch of the UN Sustainable Stock Exchanges (SSE) initiative, and five years after the launch of the World Federation of Exchanges (WFE) Sustainability Working Group, the extent of exchanges' engagement with sustainability continues to deepen and evolve. Exchanges worldwide are making concerted efforts to engage market participants and integrate sustainability into mainstream financial practices, leading to dramatic growth in activities supporting sustainable and transparent markets worldwide.

The WFE Sustainability Principles (Annex I), launched in 2018, constitute a formal declaration by the WFE and its membership to take a leadership role in promoting the sustainable finance agenda. The five principles provide a baseline to support the evolution of WFE members' engagement with sustainability, covering aspects such as product development and stakeholder engagement. Recognising that exchanges can magnify their impact through appropriate internal structures, Principle 5 requires that exchanges establish effective internal governance and operational processes and policies to support their sustainability efforts.

The purpose of this guidance is to assist exchanges in translating Principle 5 into concrete actions. To that end, it provides a blueprint for embedding sustainability into exchange operations. The blueprint highlights four focus areas where exchanges can implement recommended practices and actions to ensure that sustainability becomes integrated across the business. These areas are:

- **Ensuring sustainability is integrated into the exchange's strategic planning:** the integration of sustainability into an exchange's strategy and business plan should occur at the outset of the strategy development process, and form part of its vision and mission.

A blueprint to advance action on embedding sustainability



- **Governance and risk management:** an exchange's senior management and leadership team should show commitment to embedding sustainability; sustainability should also be incorporated within the exchange's structure and mandate.
- **ESG impact, covering the management of the exchange's direct impacts:** exchanges should be able to leverage existing sustainability management resources to identify and manage the impact of their own operations on the environment and society. The exchange should develop policies, processes and procedures to address these operational priorities, which should be monitored and evaluated to track progress.
- **Dedicated resources, to enable the sustainability work to move forward:** either an individual or team should be responsible for overseeing the implementation of an exchange's sustainability workplan. Fostering a broader sustainability culture, along with awareness programmes, can further steer an exchange towards improved sustainability. Initiatives can include greater communication of sustainability progress; an increased emphasis on recycling and energy efficiency; and opportunities for involvement such as volunteering.

In addition, four fundamental considerations that find application across the focus areas are explained. Illustrative examples are provided to demonstrate how some exchanges already deal with each focus area or consideration.

The impacts of megatrends such as the UN Sustainable Development Goals (SDGs) require a strategic response. Integrating sustainability into core strategy can help exchanges better align their practices with the current and future policy landscape. Risk identification and management as well as compliance functions can all benefit from taking into account broader sustainability factors.

Embedding sustainability is best achieved when the leadership of the exchange, particularly the CEO and/or chairperson, takes visible action to lead sustainability efforts, supported by resources dedicated to overseeing and advancing the exchange's sustainability work. Appropriate structures and policies will enable proper governance of sustainability integration.

As a business, an exchange has its own impacts on the environment and society, which need to be managed to minimise negative outcomes and support value creation. In due course, a culture of sustainability awareness will permeate throughout the exchange as it pursues sustainability as part of its vision, values and purpose.

This guidance does not prescribe a particular sequence for addressing the focus areas, since each exchange will determine their own priorities based on their unique circumstances and stage of progress. However, in order to assist stock exchanges to develop their own implementation plans, a summary of action points relating to each focus area is provided.

As an exchange takes action across the focus areas, it is important to ensure a focus on what is material and engage stakeholders along the way, including through reporting on progress and performance. Appropriate capacity building will equip the exchange's leadership and relevant staff with the necessary awareness and skills.

The SSE and the WFE will continue their individual and collaborative activities to support exchanges as they seek to implement elements of this blueprint. Putting Principle 5 into action, fully embedding sustainability into exchange operations, will serve exchanges well as sustainable finance continues to evolve over the next decade.

MESSAGE FROM THE CHAIR OF THE ADVISORY GROUP

We are witnessing a change in the corporate mindset, as companies begin to understand the need to shift their business models onto a sustainable footing. Even though it is not with the sense of urgency many of us think is necessary, a culture is taking root whereby companies set social goals in terms of inclusion, gender equality, resource sustainability and increased transparency in their governance. This new paradigm benefits a company's entire ecosystem: employees, shareholders, customers, suppliers, the environment and the rest of society at large. Just this year, chief executives of major corporations signed a public statement expressing the fundamental shared commitment to deliver value to all stakeholders.[1]

The Sustainable Stock Exchanges (SSE) initiative understood many years ago the urgent need to embrace this culture and has since then contributed significantly to raising awareness of the importance of integrating best practices for more sustainable and transparent capital markets. It has published a number of guides to provide stock exchanges, regulators and policy makers with the necessary tools to innovate by responding to market trends in sustainable finance, ESG disclosure, impact and responsible investing, identifying and managing risks and benchmarking.

The mission shared originally by five stock exchanges in 2012 has now been embraced by more than 90 exchanges worldwide. They understand the key role we play in promoting sustainable finance in our markets. They acknowledge the evolution that our business has taken from focusing mainly on our shareholders' interest and market development to a commitment in equal value to all market stakeholders, expressed through the integration of the UN Sustainable Development Goals and the adoption of responsible investment practices with high ethical standards.

The SSE and the World Federation of Exchanges (WFE) have coordinated an Advisory Group to publish this new guidance document, which provides a blueprint to integrate sustainability principles. It is a complete guide to putting WFE Sustainability Principle 5 into practice, covering strategic planning, governance, and identifying and managing risk and ESG impact in our operations. It also offers important guidance regarding the resources needed to effectively implement these recommendations.

The Panama Stock Exchange has been honoured to chair the Advisory Group and participate alongside distinguished and committed experts in the elaboration of this document. We believe this guide makes a considerable contribution to enabling stock exchanges to effectively implement the actions needed to embed sustainability within their operations.

Olga Cantillo
CEO of the Panama Stock Exchange

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ACRONYMS

BME	Bolsas y Mercados Españoles (Spanish Stock Exchange)
CDP	CDP, formerly the Carbon Disclosure Project
COSO	Committee of Sponsoring Organizations of the Treadway Commission
CRD	Corporate Reporting Dialogue
CSR	Corporate social responsibility
DFM	Dubai Financial Market
EGX	Egyptian Exchange
ERM	Enterprise risk management
ESG	Environmental, social and governance
G20	Group of Twenty, an international forum for the governments and central bank governors from 19 countries and the European Union
GRI	Global Reporting Initiative
HKEX	Hong Kong Exchanges and Clearing
IIRC	The International Integrated Reporting Council
ISO	The International Organization for Standardization
JSE	Johannesburg Stock Exchange
LEED	Leadership in Energy and Environmental Design
NSE India	National Stock Exchange of India
NSE Nigeria	The Nigerian Stock Exchange
NZX	New Zealand's Exchange
OECD	The Organisation for Economic Co-operation and Development
PRI	Principles for Responsible Investment
SASB	Sustainability Accounting Standards Board
SDG	Sustainable Development Goal
SET	Stock Exchange of Thailand
SGX	Singapore Exchange
SSE	Sustainable Stock Exchanges initiative
SZSE	Shenzhen Stock Exchange
TCFD	Task Force on Climate-related Financial Disclosures
UAE	United Arab Emirates
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNFCCC	United Nations Framework Convention on Climate Change
UNGC	United Nations Global Compact
WBCSD	World Business Council for Sustainable Development
WFE	World Federation of Exchanges

I. INTRODUCTION

1. Context

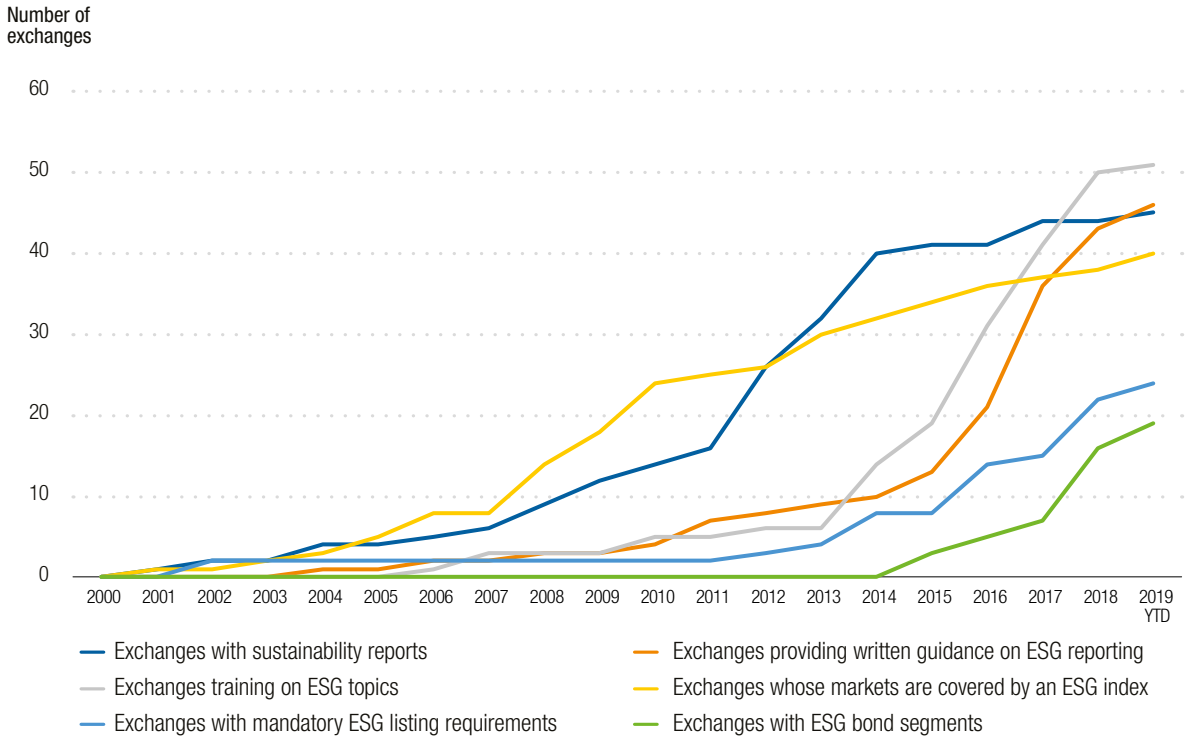
As a central point of contact for issuers, investors and market intermediaries, exchanges have long been recognised as important vectors in the sustainability transition. Ten years after the launch of the SSE initiative, and five years after the launch of the WFE Sustainability Working Group, the extent of exchanges' engagement with sustainability continues to deepen and evolve.

The growth in market-facing sustainability activities by exchanges (Figure 1), demonstrates that exchanges recognise their potential impact in engaging markets and integrating sustainability into mainstream financial practices. These efforts remain critical as the mainstreaming of sustainable finance continues. However, there is growing recognition that exchanges can be most effective when their efforts are supported by appropriate strategic planning, governance structures and processes.

Exchanges have undergone significant changes in structure and organisational form as well as business and ownership models.[2] Demutualisation, listings, mergers and acquisitions have enabled some exchanges to grow beyond being national marketplaces for raising and investing capital into large, multinational organisations with global footprints. At the same time, new technologies and means for companies to raise capital are requiring exchanges to innovate to remain competitive.

As businesses themselves (regardless of the corporate form they take), exchanges seek long-term growth. They therefore consider factors that can influence their business now and in the future in order to strategise and allocate resources accordingly, while managing risks, opportunities and regulatory requirements through proper oversight and operational systems. Considering these aspects within the context of sustainability can enable exchanges not only to increase the impact of their market-facing sustainability efforts but also to build resilience in their own operations.[3]

Figure 1 Growth of stock exchange sustainability activities



Source: SSE database.

2. Purpose of this guidance and target audience

In 2018, the WFE launched the WFE Sustainability Principles (Annex I), a set of five principles to be used by exchanges as the baseline for the development of initiatives that contribute to the achievement of a sustainable financial system.[4] The first four principles are market-facing commitments by WFE members to further the sustainability agenda through active stakeholder engagement and by providing products, services and data to market participants. WFE Sustainability Principle 5, meanwhile, addresses exchanges' own governance and processes as they relate to their sustainability efforts (Box 1).

The SSE initiative and the WFE have collaborated to produce this guidance to help exchanges translate Principle 5 into concrete actions. The guidance is primarily intended to be used by exchanges' governing bodies[5] and executive leadership. They can be assisted by a sustainability officer or a team, who may be charged with responsibility for giving effect to actions or implementation plans.

3. A blueprint for action

At the core of this guidance is a blueprint for exchanges to follow to help them embed sustainability into their operations. It provides detailed action steps, categorised into four focus areas (Figure 2).

The guidance also discusses the following four fundamental considerations that find application across these focus areas: materiality, stakeholder engagement, reporting and capacity building. Throughout the guidance, illustrative examples are provided to demonstrate current practices.

4. Implementing the blueprint

The extent to which exchanges address each of the focus areas of this guidance will vary. Factors such as an exchange's business model and the availability of resources may impact its ability to fully address all the elements of this guidance. Annex II lists some barriers that may be encountered and suggests which section of this guidance can help overcome them.

Exchanges will be at different stages of embedding sustainability; some will be taking their first steps with this guidance, while others who are already advanced will use it to benchmark and enhance their efforts. For that reason, the guidance does not prescribe any specific sequence in which the focus areas should be addressed; exchanges should consider which areas are a priority and develop their implementation plans accordingly.

While each exchange's journey may be unique, the SSE and the WFE believe that the focus areas provide a broadly applicable blueprint for exchanges who wish to embed sustainability in their business operations.

Box 1 Principle 5 of the WFE Sustainability Principles

Principle 5: Exchanges will establish effective internal governance and operational processes and policies to support their sustainability efforts

"The organisations that have shown themselves to be most effective at supporting the sustainable finance agenda are those that have embedded sustainability into their governance, strategy and organisational structures. While it is possible for exchanges to have a positive impact even if they have a purely external focus, this impact is magnified if it is supported with a clear understanding of purpose and outcomes, and ongoing investment in the sustainable finance agenda.

WFE members will therefore seek to ensure they have the necessary governance and other frameworks to support the shift to a more sustainable financial system. This could include:

- Leading by example through incorporating ESG disclosure into the exchanges' own sustainability reporting;
- Educating staff about sustainability risks and opportunities;
- Developing mechanisms to stay abreast of, and evaluate, emergent sustainability issues and incorporating these into the exchanges' existing and future activities, as required; and / or
- Establishing clear board and senior management oversight of the exchange's own management of ESG risks and opportunities."

Source: World Federation of Exchanges.

Figure 2 **A blueprint for embedding sustainability**

Integrate sustainability into the exchange's core strategic planning

Incorporate sustainability into the exchange's vision and mission

- ☐ Include sustainability aspirations into vision and/or mission

Scan the landscape to identify relevant sustainability trends

- ☐ Review global trends such as the SDGs and country- or region-specific sustainable development plans
- ☐ Review the competitive and operating environment
- ☐ Engage stakeholders

Evaluate impacts of relevant trends

- ☐ Consider actual or anticipated impacts on the exchange business
- ☐ Consider changes that issuers are undergoing and what they may look like in the future
- ☐ Identify factors that are critical to achieving strategic goals

Review existing plans and scenarios

- ☐ Develop strategies to cover significant sustainability trends
- ☐ Align existing priorities
- ☐ Set specific sustainability goals

Manage the impacts of exchange operations

Identify relevant operational matters

- ☐ Conduct a broad overview of sustainability frameworks to identify operational considerations
- ☐ Identify the resources that the exchange is dependent upon, such as skills and technology
- ☐ Assess the exchange's environmental and social impacts

Set priorities for integration

- ☐ Conduct a materiality assessment
- ☐ Determine focus aspects

Develop management systems to address operational priorities

- ☐ Define policy statements
- ☐ Align existing systems and procedures
- ☐ Train relevant staff

Take action and monitor progress

- ☐ Develop a monitoring and evaluation plan
- ☐ Document outcomes and provide feedback
- ☐ Review findings

Reflect sustainability in governance and risk management

Demonstrate commitment from the top

- ☐ Encourage visible actions from the chairperson and/or CEO

Implement structures and practices that enable integration of sustainability

- ☐ Appoint board members with sustainability skills
- ☐ Implement ongoing sustainability education of the governing body
- ☐ Link sustainability considerations to remuneration and incentives
- ☐ Oversee operational integration and reporting
- ☐ Integrate sustainability into risk management and stakeholder engagement
- ☐ Consider sustainability as part of budgeting and financial management

Integrate sustainability into risk identification and management

- ☐ Detect new risks from sustainability impacts
- ☐ Assess the sustainability implications of existing risks
- ☐ Prioritise risks
- ☐ Develop management and mitigation plans

Ensure that compliance includes sustainability-related obligations

- ☐ Expand the compliance landscape scan
- ☐ Develop systems to manage compliance with sustainability-related laws, regulations and contractual provisions

Dedicate resources or a team to manage the exchange's sustainability work

Allocate resources to sustainability

- ☐ Identify sustainability activities for resourcing
- ☐ Decide whether to appoint dedicated resources or allocate functions to existing staff
- ☐ Allocate responsibility to one or more people

Integrate sustainability across exchange functions

- ☐ Identify functions that are influential to engage
- ☐ Communicate sustainability initiatives to relevant staff
- ☐ Prioritise functions necessary to progress action plans

Build a culture of sustainability awareness

- ☐ Review levels of awareness of sustainability
- ☐ Communicate the process, motivations and intended outcomes and each person's role to support success
- ☐ Create opportunities to involve staff

Source: SSE, WFE.

II. INTEGRATE SUSTAINABILITY INTO AN EXCHANGE's CORE STRATEGIC PLANNING

1. Introduction

Exchanges (like most businesses) are operating within a highly dynamic environment where competition is now mostly global and comes increasingly from non-traditional sources, requiring them to employ strategic planning to position and differentiate themselves. This planning incorporates strategic scans of the capital markets landscape, identification of relevant trends and developments, and the formulation of appropriate responses.

As sustainable finance becomes increasingly mainstream, and as achievement of the SDGs becomes ever more pressing, most exchanges already consider sustainability as strategic.[6] This often leads to the development of a standalone sustainability strategy. Eventually, however, exchanges may wish to integrate sustainability into their core strategic planning, to enhance their impact and to support the resilience of the exchange itself.

A number of resources are available that offer models or guidance on the integration of sustainability into strategy.[7] Exchanges may wish to consult these for support on their journey. However, the recommendations in this guidance should be sufficient to enable such integration.

2. Recommended practices

2.1 Incorporate sustainability into the exchange's vision and mission

Organisations often define an aspirational purpose. This could be captured in a vision and/or mission statement, while strategy describes the steps to achieve the ideal. Incorporating specific aspirations around sustainability into the vision and/or mission will ensure that strategy and business planning incorporates social and environmental considerations and good governance.[8] For an exchange, this could be aspects such as aligning with public policy goals on sustainable development, promoting sustainable finance and advancing corporate disclosure of social and environmental performance.

2.2 Scan the landscape to identify relevant sustainability trends

Global megatrends have long been dominated by technological disruption, environmental crises (particularly climate change), and societal or geopolitical shifts.[9] The SDGs (Figure 3) were designed to address the most significant sustainability challenges that the world faces. Reviewing the goals and related indicators can provide exchanges with an overview of global megatrends and impacts.

Figure 3 The SDGs represent key global megatrends

Source: United Nations.

Broader influences or trends that are changing the way the world works may be global like the SDGs, but may also be country- or region-specific developments, such as national sustainable development plans or commitments,[10] as well as regulatory interventions, which are operational in nature.

Strategic challenges may relate to innovations in the financial sector generally or vary across exchanges due to factors such as geographic location, nature of activities and composition of membership. A scan of the social and environmental influences or trends that are strategically relevant to the exchange will offer new and more extensive perspectives on the competitive and operating environment and related stakeholders. Engaging stakeholders in the process of identifying relevant sustainability trends and impacts can help to develop a more comprehensive assessment.

2.3 Evaluate impacts of relevant trends

To develop strategic responses to material social and environmental developments, the exchange needs to consider the following:

a. The actual or anticipated impacts on the exchange as a business;[11] and

b. Changes that issuers may undergo pursuant to emerging trends and changes already happening in markets, to reflect on what these companies may look like in the future. For example, an exchange which understands the potential impacts of climate change on various sectors may then consider strategic responses, such as the development of products that fund climate mitigation and adaptation initiatives.

Impact analysis processes are likely to overlap closely with risk assessments, but the focus in the strategy development process is on identifying the factors that are critical to achieving strategic goals and building the responses.

2.4 Review existing plans and scenarios

Having identified and assessed the sustainability factors that may be materially relevant to the exchange, its stakeholders or competitors, the exchange will be well positioned to review existing strategic plans and scenarios in order to:

a. Develop strategic responses to significant sustainability trends which are not yet incorporated into strategic plans;

b. Align existing goals and priorities with sustainability considerations; and

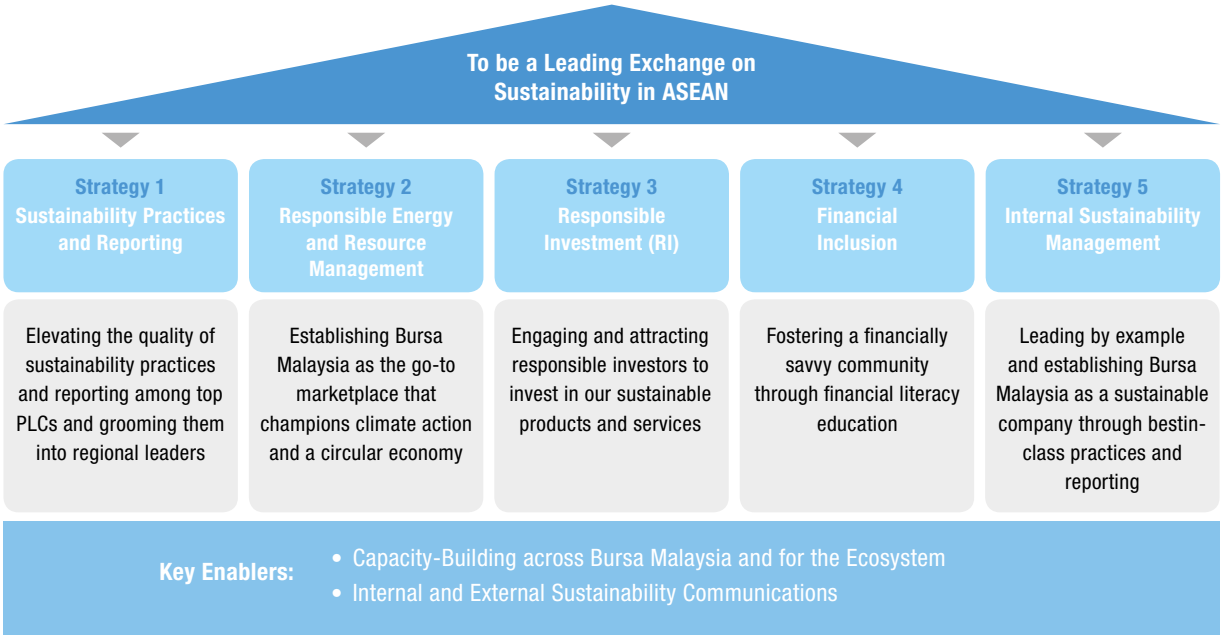
c. Set specific goals/objectives around sustainability issues as part of its broader strategy.[12]

As consideration of sustainability becomes embedded into the practices and disciplines of strategy development, strategies may move beyond the typical shorter term (two-to-five years) to incorporate a medium- to longer-term strategic outlook.

3. Illustrative examples

- **Borsa Istanbul** reports that its business model integrates within the exchange's business structure the six capitals (financial, human, intellectual, manufactured, social and relationship, and natural capital) recommended by the Integrated Reporting (<IR>) Framework, developed by the International Integrated Reporting Council (IIRC).[13] The exchange explains that these six capitals are then linked to value generation through four value generation propositions: customer, employee, shareholder and social value.
- In line with Guidance No. 1.1 of the Malaysian Code on Corporate Governance, **Bursa Malaysia**'s Board Charter states that the board is responsible for reviewing and approving strategic initiatives, to ensure they support long-term value creation and take into account economic, environmental and social considerations.[14] As part of the development in 2018 of its sustainability roadmap (Figure 4), the exchange also identified the value created and sustained through six forms of capital, and conducts benchmarking research to ensure its competitiveness relative to other exchanges/ markets in the development of strategy.[15]
- **Dubai Financial Market** (DFM) notes taking an 'outside-in' approach to its sustainability strategy development, through aligning to the SDGs, the country-wide efforts of the United Arab Emirates (UAE) and Dubai, and by integrating sustainability into business strategy. For example, in line with the UAE Green Agenda 2015-2030 (the UAE's commitment to the Paris Agreement), the SDGs and Dubai's Vision 2021 to create a smart and sustainable city, DFM mentions implementing several initiatives to drive a sustainability strategy in alignment with SDGs 4, 5, 8, 12, 13 and 17.
- **Hong Kong Exchanges and Clearing** (HKEX) reports that as part of its strategic planning, it regularly reviews and develops its CSR strategy within the context of its overall business priorities, objectives, ambitions and values, and taking into account the expectations of stakeholders.[16]
- The **Nigerian Stock Exchange** (NSE Nigeria) reports on the implementation of a sustainability strategy anchored on four pillars (Figure 5) which was developed through review of the exchange's stakeholders and key megatrends at the time.[17] By means of a continuous review of the strategy, existing scenarios were revisited and initiatives expanded to enable NSE Nigeria to embrace sustainability principles. The exchange reports that this strategic approach has allowed it to effectively influence its ecosystem through a revised strategy that ensures alignment with the SDGs, the UN Global Compact and other frameworks.[18]

Figure 4 Bursa Malaysia's sustainability roadmap 2019-2020



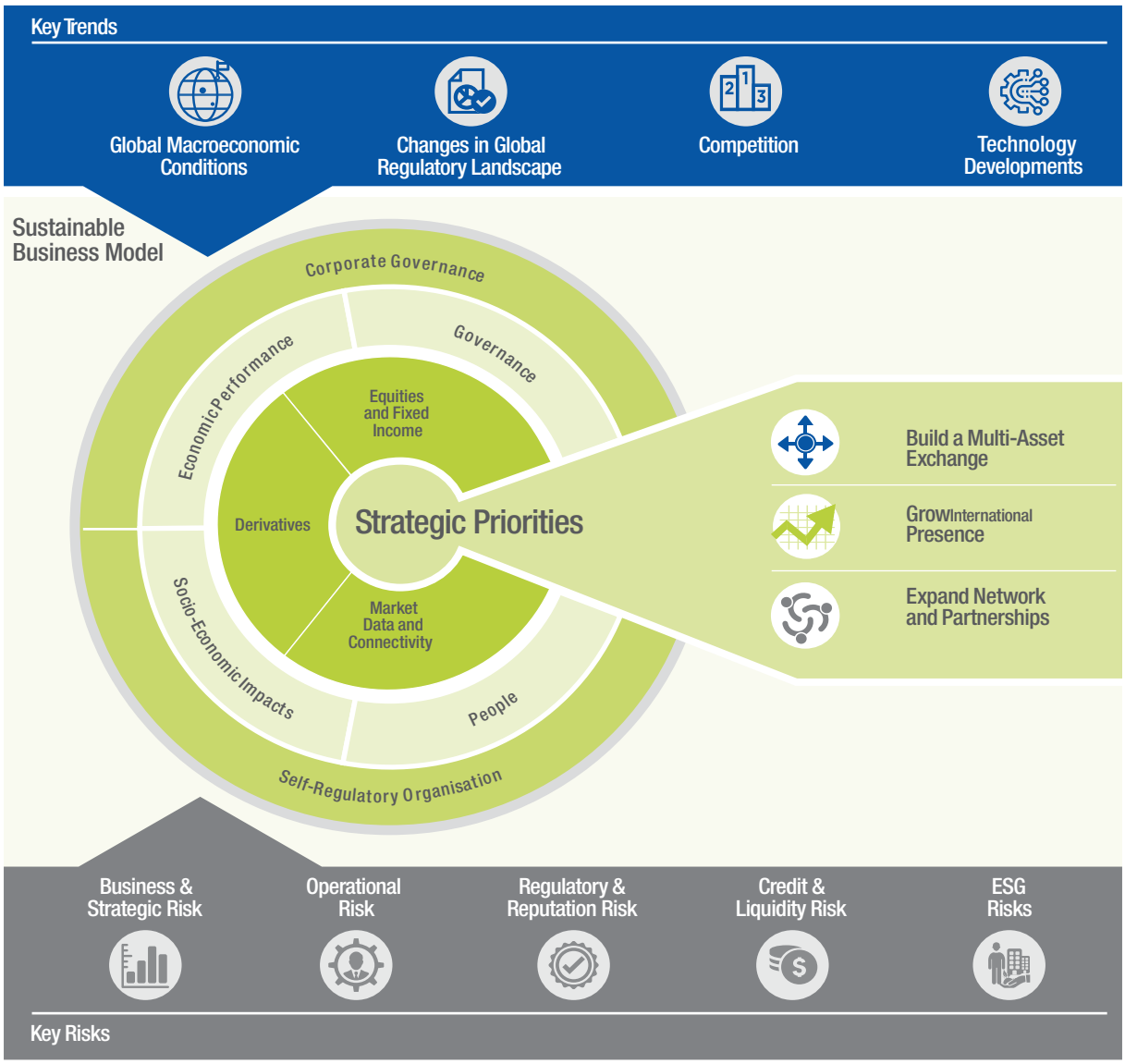
Source: Bursa Malaysia Sustainability Report 2018.

Figure 5 The Nigerian Stock Exchange's sustainable business pillars

Source: The Nigerian Stock Exchange 2016 Sustainability Report.

- Chile's **Santiago Exchange** states that it has rebranded to reinforce its corporate business value, defining itself as "a technological, innovative, transparent, reliable and sustainable company".[19] The new branding also coincided with the launch of a new website, which includes more information on ESG approaches taken by market participants in a 'Sustainability and Innovation' section. The exchange also reports on a sustainability policy that establishes five core concepts (corporate governance, human rights, supply chain, inclusiveness and diversity, and environment) that form the basis of its commitment and which interpret, guide and measure the exchange's progress on sustainability management.[20]
- **Shenzhen Stock Exchange** (SZSE) has published the "Shenzhen Stock Exchange Development Strategy Plan (2018-2020)", which incorporates ESG principles to achieve green and sustainable growth through a series of concerted actions.
- The **Singapore Exchange** (SGX) reports that it integrates sustainability within its business strategy through allocation and deployment of four forms of capital, namely financial, human, intellectual and social, which provide the inputs to a value creation model that integrates key trends and risks to inform strategic priorities (Figure 6).[21]

Figure 6 Singapore Exchange's sustainable business model



Source: Singapore Exchange Annual Report 2018.

III. REFLECT SUSTAINABILITY IN GOVERNANCE AND RISK MANAGEMENT

1. Introduction

Governance encompasses oversight structures, processes and systems for managing risk, setting strategy, monitoring performance against objectives and reporting. Good practices in this regard can support economic efficiency, sustainable growth and financial stability while ensuring fair treatment of shareholders and other stakeholders.[22]

Governance is often combined with enterprise risk management (ERM) and compliance, given the interrelated nature of the processes and controls involved, and the fact that they touch multiple operational functions. Effective governance, risk management and compliance is the result of having appropriate structures and processes in place and conducting continuous review to ensure that such structures and processes operate in line with the needs of the exchange.

2. Recommended practices

2.1 Demonstrate commitment from the top

Governance is increasingly about the exercise of ethical and effective leadership, providing strategic direction and oversight of performance.[23] The ultimate accountability for governance, risk management and compliance resides with the highest leadership levels of the exchange.[24] The exchange leadership should therefore set the tone for embedding sustainability.

A commitment from leadership to embed sustainability into the exchange's strategy and operations can be demonstrated through visible actions by the chairperson and/or CEO of the exchange to lead efforts. Actions could include their participation in sustainability committees, taking responsibility for signing off on initiatives, being accountable for overseeing progress and providing feedback to key stakeholders, and seeking opportunities to publicly discuss the exchange's approach to sustainability.

The tone at the top influences the way that stakeholders perceive or interact with the organisation. Many institutional investors regard governance practices as core in evaluating the investability of an organisation, or the attractiveness of a market more generally. In addition, employees or prospective employees are increasingly attracted to a work environment that displays clear commitments to ethics and sustainability. Failures in governance and ethics breach trust, which can lead to devastating value destruction for the exchange through loss of business or talent.

2.2 Implement structures and practices that enable integration of sustainability

With the active involvement and leadership of the chairperson and/or CEO, sustainability should be incorporated across the structure and mandates of the governing body. This incorporation touches on various elements of governance detailed below, along with corresponding recommendations. The exchange may also consider incorporating consideration and/or oversight of sustainability matters into the responsibilities of various subcommittees (e.g. audit, risk, remuneration etc.) or a dedicated sustainability committee.

Composition of the governing body and executive leadership

It is increasingly accepted that a mix of skills and expertise, coupled with diversity across aspects such as gender, age and ethnicity, support effective leadership. Many exchanges already pursue leadership diversity as an imperative.

Specifically incorporating knowledge, expertise and experience of relevant social and environmental matters at governing and leadership levels can add further depth to the spread of skills and helps the exchange integrate sustainability considerations across its business strategy, risk management and operations.

Where sustainability-related skills may not be available or cannot easily be developed over time, the governing body may wish to establish when and how they might solicit independent professional advice.

Ongoing education of the governing body

Ensuring that the governing body remains aware of and informed about material sustainability trends and developments is critical. A clear understanding of sustainability and how it relates to the exchange's business model and role will support development of strategy, identification of material topics and management of risks and opportunities.

There are a number of actions that the exchange can take to help the governing body gain better awareness, for example establishing a standing agenda item on sustainability, increasing the frequency of management reporting on social and environmental risks, opportunities and related efforts, involving the governing body in stakeholder discussions and including social and environmental matters into topics for capacity building. Box 2 suggests some practical questions that the governing body can consider to test the level of its engagement with sustainability.

Compensation and/or remuneration

The exchange's compensation model should integrate consideration of material sustainability matters and link remuneration and incentives to performance on ESG management. As a supporting resource, the PRI has produced guidelines on and research into integrating ESG issues into executive pay.[25]

Active oversight

The governing body should be actively involved in the oversight of:

- The operational integration of sustainability, including setting targets and monitoring of progress; and
- Sustainability reporting and/or integrated reporting.

Approval of policies

The governing body should ensure that the models and systems to be implemented in relation to risk management and stakeholder engagement support the integration of sustainability issues.

Financial management

The governing body can consider relevant social and environmental risks, opportunities and obligations when reviewing annual budgets and when overseeing major capital expenditures, acquisitions and divestitures.

2.3 Integrate sustainability into risk identification and management

As financial services organisations, exchanges are familiar with the typical risk categories used by the sector, such as financial risk, credit risk, market and liquidity risk, operational risk, reputational risk and regulatory or compliance risk. The financial sector is already required to address risks with potential systemic implications.[26] Sustainability considerations are potentially large in scale and consequence and, although generally viewed as long-term, some impacts could manifest themselves in the short term. The related risks could be systemic in nature, especially where disruptive social or environmental impacts lead to changes across economic sectors and industries that have implications for the global financial system.[27]

Sustainability risks can manifest in isolation (such as environmental risk or risks in relation to human capital or societal matters) or fall under a broad risk category, depending on the potential impact of the issue on the exchange.

Box 2 Taking the lead: considerations for the governing body

The **Cambridge Institute for Sustainability Leadership – Earth on Board Programme** aims to equip governing bodies with sustainability knowledge and tools, through customised briefings and guidance on engagement with sustainability. The programme notes that, with their unique position and responsibilities, governing bodies have to show the way. It suggests that governing bodies should consider whether they are:

- Spending sufficient time on social and environmental issues to identify material risks and opportunities;
- Engaging regularly with stakeholders, and understanding their expectations;
- Prepared for new disclosure requirements;
- Challenging management and asking tough questions on the right issues;
- Considering whether operations and supply chains are resilient to extreme weather events and resource scarcity; and
- Aware of the implications of sustainability challenges for customers and confident that the business is equipped to meet future market needs.

Source: Adapted from Cambridge Institute for Sustainability Leadership – Earth on Board Programme.

Effective integration of sustainability into risk identification and management includes the following practices:

a. Detecting any risks that may arise from impacts of sustainability trends identified during the strategic landscape scan. For example, climate change is causing an increase in the intensity and frequency of extreme weather events which may pose operational risks to an exchange; new or enhanced environmental or social regulations could pose compliance or regulatory risks, and increased financial risk may arise from the introduction of new tax policies (such as a carbon tax). Meanwhile, emerging risk categories – such as transition risk in relation to climate change, technological risk around data, cybersecurity, privacy protection and business continuity – are becoming increasingly significant.

b. Assessing whether existing risks or risk categories have any embedded sustainability implications.[28] For example: inadequate labour policies could pose compliance or regulatory risks and impact the attraction and retention of talented staff, which could in turn pose financial, reputational and operational risks.

c. Prioritising risks according to likelihood and impact to determine appropriate mitigation strategies for the most significant risks.

ERM processes are often well-defined and structured. Leveraging these structures and processes can support the identification and integration of sustainability-related risks, ensuring alignment with conventional risk (Box 3). Engaging stakeholders in the process of identifying risks could also help exchanges undertake a more comprehensive assessment. For example, the WFE Enterprise Risk Working Group exists as a platform whereby WFE member exchanges can develop industry consensus positions on enterprise risk management and operational risk management issues. The group also facilitates information sharing and seeks to forge best practices and guidelines for the exchange industry.

2.4 Ensure that compliance includes sustainability-related obligations

Sustainability-related developments may also impact on the legal, regulatory and contractual obligations of the exchange. Non-compliance with these requirements can be costly, considering the potential impacts of fines or liability for breach of contract, damage suffered as a result of business disruption, and productivity and revenue losses, not to mention reputational damage.

As with risk management, the exchange can put systems and procedures in place to ensure that relevant sustainability requirements imposed by laws, regulations and contracts are identified when examining the compliance landscape. This can help maintain compliance and ensure breaches are detected and rectified in a timely fashion.

Sustainability themes that are often regulated include:

- Governance structures and systems, including anti-corruption measures;
- Operational requirements around topics such as environmental management (covering, for example, emissions, energy, water and waste management) and social aspects (such as human rights and employment);
- Data management (including governance, cybersecurity, privacy and data quality and integrity); and
- Related reporting and disclosure obligations.

Contractual provisions may relate to (among other things) anti-corruption, procurement, environmental management and liability for breach.

Box 3 Challenges to aligning ESG and conventional risk disclosure

The Committee of Sponsoring Organizations of the Treadway Commission (COSO) and the World Business Council for Sustainable Development (WBCSD) have published guidance for applying ERM concepts and processes to ESG-related risks. The publication notes that the issues reported in sustainability reports or ESG disclosures do not always align to the risks reported in an organisation's risk disclosures.[a] The report notes that "WBCSD member companies point to a range of reasons for this, including:

- The challenge of quantifying ESG-related risks in monetary terms. Not doing so makes prioritisation and appropriate allocation of resources much more difficult, particularly when the risk is long-term with uncertain impacts emerging over an unknown time period;
- Lack of knowledge of ESG-related risks across the entity and limited cross-functional collaboration between risk management and sustainability practitioners; and
- ESG-related risks managed and disclosed by a team of sustainability specialists and viewed as separate or less significant than conventional strategic, operational or financial risks – leading to a range of biases against ESG-related risks."

Source: WBCSD.

[a] WBCSD (2018) Applying Enterprise Risk Management to Environmental, Social and Governance-related Risks, page 5.

3. Illustrative examples

3.1 Governance

- The **Bolsa de Valores de Lima** in Peru has a committee of corporate governance and talent management which reports to the board of directors regarding all corporate sustainability information under its control. The committee is responsible for reviewing and approving the annual sustainability report, which includes the report on compliance with the Code of Good Corporate Governance for Peruvian Companies. Section 3 of the committee's rules of procedure recommends that members of the committee have knowledge and experience related to ESG issues.
- **Borsa Istanbul** has an independent membership policy based on the requirements of the Capital Markets Board of Turkey. This policy requires at least a third of the board to be independent, and at least one independent director to be a woman, with women comprising at least 25% of the board.
- **Bursa Malaysia's** board diversity policy reportedly includes considerations such as age, ethnicity and gender, skills and experience, cultural and geographical background etc. to ensure a balanced board of directors.[29]
- The board of directors of **HKEX** has delegated the day-to-day responsibility for all CSR-related matters to the CSR committee, which consists of five board members, including the board chairperson, the chief executive and three other board members. Reporting to the board on a regular basis, the CSR committee is responsible for providing direction on and overseeing the development and implementation of HKEX's CSR initiatives in relation to sustainability, environmental protection and philanthropic and community investment.[30]
- The **Johannesburg Stock Exchange** has a group social and ethics committee, comprising four non-executive board members, which assists the board to ensure that the business accounts for its conduct not only in terms of its financial performance but also with regard to its ESG performance. The committee reported that during 2018 its key focus areas comprised sustainability, stakeholder responsibility, transformation, compliance and ethics.[31]
- The **Santiago Exchange** has a governance and sustainability committee that reports to the board and is composed of three independent directors plus the chairman. The exchange states that this committee discusses and approves all sustainability initiatives and information within the exchange (such as its annual integrated report, monitoring the progress of its sustainability matrix and the IFC Corporate Governance Progression Matrix). It also establishes initiatives around enhanced transparency and ESG practices to be recommended to issuers and other market participants.
- In its 2018 annual report, **SGX** states that its executive management committee (EMCO), which reports directly to the board, drives sustainability efforts at the exchange.[32] The exchange reports that the board considers sustainability issues as part of strategy formulation, manages the process to determine material ESG factors, and oversees the management and monitoring of these factors. Governance has been identified as one of four material factors that are important to the sustainability of the organisation.

3.2 Risk

- The internal control and ERM framework employed by **DFM** has reportedly been defined according to principles and guidelines set out in the COSO ERM framework, ISO 31000:2018 and the KPMG ERM model.[33] According to this framework, a systematic approach is employed to identify, analyse and evaluate strategic and operational risks. Starting with employees, a cross-functional risk reporting network is implemented through a risk champion for each market segment. Oversight is provided by the audit committee and the board of directors. ESG risks are being integrated into the risk management framework, which considers strategic, financial, operational and compliance risks, particularly with reference to environmental and human capital risks within the business continuity plan, which is based on the ISO 22301:2012 Business Continuity Management System.
- **SGX** discusses its material ESG risks and opportunities in its annual report, identifying human resources, technology and climate change as posing material risks (Figure 7).[34]

Figure 7 **Singapore Exchange's ESG risks**

Our ESG Risks and Opportunities

Where we have assessed the impact of our ESG risks and opportunities to be material, we have addressed them below:

Human Resource Risks

People are our key asset. Talent attraction and retention are crucial in Singapore's highly competitive financial market. Our talent strategy ensures SGX remains an attractive place to work in.

Technology Risks

Providing reliable technological platforms is critical to business continuity as technology-related service disruptions have the potential to cripple our operations. To address this, we will continue to enhance our recovery capabilities, processes and communications to effectively manage crisis situations.

Climate Change Risks

As a small island state, Singapore is vulnerable to rising sea levels and other features of climate change. The Singapore government's Public Sector Sustainability Plan and Climate Action Plan have laid out the nation's strategy to reduce emission levels, increase energy efficiency, and address climate change. Although SGX's environmental footprint is small, we manage it prudently in the light of national policy actions, guided by our Environmental Policy.

Source: Singapore Exchange Annual Report 2018.

IV. MANAGE THE IMPACTS OF EXCHANGE OPERATIONS

1. Introduction

Most of the sustainability guidance provided to exchanges relates to their external influence on the market. There has been relatively little advice available on how the exchange industry might address its own impacts. While exchanges are somewhat idiosyncratic organisations, playing unique roles in their markets, they share many operational similarities with other industries, particularly the broader financial and technology sectors. Exchanges should therefore be able to leverage existing broad-based sustainability management resources to identify and manage the impacts of their operations, and/or to benchmark against industries that engage in similar activities.

2. Recommended practices

2.1 Identify relevant operational matters

Various resources capture the broad range of sustainability themes and specific topics (such as climate change or human rights) of which organisations need to be aware. These include the following:

- Broad frameworks such as the UN Global Compact, the OECD Guidelines for Multinational Enterprises and the SDGs;
- Topic-specific frameworks such as the CDP, the Task Force on Climate-related Financial Disclosures (TCFD) and the UN Guiding Principles for Business and Human Rights;
- National frameworks for sustainable development;
- Benchmarks such as Future Fit and the Natural Capital Protocol; and
- Reporting frameworks such as the GRI Standards and the Sustainability Accounting Standards Board (SASB). (While reporting is ideally an outcome rather than a starting point, reporting on set indicators can spur the implementation of relevant management and monitoring systems).

A broad overview of typical operational considerations will help the exchange to hone in on the topics that are particularly relevant to it. Aspects to consider in particular include:

- Dependencies – what are the resources that the exchange relies on to operate, such as tangible resources (financial, natural, human and physical) and intangibles (intellectual knowledge and skills); and
- Impacts – what are the consequences of the exchange's activities for the environment and society which need to be managed to minimise negative impacts or enhance positive effects.[35]

Engaging stakeholders in the process of identifying operational matters and impacts can lead to a more comprehensive assessment.

Operational sustainability issues that may be relevant in the exchange context include:

- Employment practices – attracting and retaining talent, skills development, fair labour policies, promotion of diversity and equality;
- Social impacts – community engagement and involvement, and protection of human rights;
- Environmental concerns – management of facilities, exposure to natural disasters, waste management, and monitoring of energy and water consumption;
- Social and environmental aspects in the supply chain; and
- Cybersecurity, data protection and business continuity – avoiding disruption and system failures.

2.2 Set priorities for integration

Exchanges should focus on those issues that are material to their business and avoid attempting to prioritise too many issues and failing to gain real traction on any of them. Focusing on a few selected material issues that are linked to strategic objectives will support deeper integration and enable more efficient resourcing.[36]

Decisions on where to focus operational responses should be underpinned by a materiality assessment or a prioritisation exercise, to enable the exchange to address the issues that matter most to the business and its stakeholders. This may already have been conducted at a more strategic level during strategy development, and when identifying key risks, but is best to also address day-to-day aspects that are business-critical.

2.3 Develop management systems to address operational priorities

To guide implementation, the exchange may wish to develop management systems that capture the policies, processes and procedures that will be employed to ensure that operational priorities are addressed.

This involves the following actions:

a. Defining a policy statement that sets out the general commitments and objectives in relation to the relevant issue(s), and establishing the procedures required to implement this policy;

b. Reviewing existing systems, procedures, job descriptions and metrics to identify whether changes or new approaches are required to align with sustainability policies and goals; and

c. Conducting training on the policy and procedures for relevant staff and communicating the policy to stakeholders.

Policy content may include the following:

- Definition of the topics covered (for example climate change, human rights, ethics etc.) and the intended objectives of the exchange as it relates to each topic;
- Any standards, protocols or commitments that may be in place in relation to the topic covered by the policy (e.g. signatory to UN Global Compact, applying recommendations of the TCFD, etc.). Relevant laws and regulations may also be noted to the extent that it guides policy and reporting;
- Application boundaries (which operational areas of the exchange are subject to the policy); and
- Governance structures setting out decision authority and accountability for delivery.

Sustainability-specific policy templates are widely available,[37] or can be developed with guidance from general or topic-specific resources. Stakeholder expectations typically dictate that policy documents should be publicly available.

2.4 Take action and monitor progress

Consistent monitoring and evaluation of implementation and progress supports successful action, allowing the exchange to determine whether the policy and procedures have been successful, and whether targets need to be modified. Exchanges may wish to:

a. Develop a formalised monitoring and evaluation plan;

b. Document outcomes and provide feedback to key personnel and stakeholders; and

c. Review findings to see trends, identify strategies that are working and identify where modified policies and/or procedures are required.

A monitoring and evaluation plan typically covers the following:

- The relevant targets/objectives and related timelines, as well as the intended outcomes. Targets should be ethical, realistic, aligned with strategy and defensible to a wide range of stakeholders;[38]
- The metrics/indicators being used to monitor progress and/or performance, including:
  - The rationale for selecting the metric;
  - A baseline performance measure;
  - Frequency of measurement and reporting; and
  - Unit of measurement (if quantifiable) or description of measure.

  (If a particular sustainability reporting tool or framework is being employed, some of the metrics/indicators may be suggested or prescribed.);
- Staff that are involved in and/or accountable for implementation; and
- The procedures/tools for collecting, distributing and storing data.

Even if the process is formalised, it is important to retain adaptability to adjust the approach, timelines or targets when circumstances necessitate, provided that any revisions still support progress towards the intended outcome or align with the strategic intent.

Frequent internal communication of the policy and progress on implementation and performance is important to ensure that the employees involved or affected can understand the goals and are empowered to deliver on them.[39] In addition, periodic progress reporting to those responsible for oversight is essential to enable action on and inform public disclosure.

3. Illustrative examples

- To minimise environmental impacts directly associated with its activities, **B3** of Brazil reports that it adopts the following guidelines:[40]
  - Maintaining an eco-efficiency programme to optimise the use of water, energy and paper on its premises;
  - Managing greenhouse gas emissions through an emissions inventory;
  - Properly managing solid waste, including selective garbage collection and environmentally appropriate waste disposal; and
  - Pursuing environmental certifications: the B3 datacentre is LEED (Leadership in Energy and Environmental Design) certified.
- **DFM** reports having taken a number of steps

towards managing and reducing its environmental impact. These include moving towards a paperless environment in its interactions with customers and subscribing to the GreenBox service to manage its own waste. The exchange uses specialised technology ("Vblock technology") in its data centre which is designed to lower power consumption and facilitate improved utilisation of space and network resources. DFM also reports on several other initiatives to lower power consumption, including using power-saving LED lights, and implementing lights-off rules after office hours. On the social side, DFM aims to be a standard-bearer for gender diversity with a 58% female workforce at the end of 2018.[41]

- The **National Stock Exchange of India** (NSE India) reports a number of updated and new policies on ESG issues and a code of conduct to make its policies more inclusive.[42] These policies are directed towards meeting the nine principles of India's National Voluntary Guidelines on the social, environmental and economic responsibilities of business, published by the Ministry of Corporate Affairs of India. The policies include a group CSR policy, group e-waste and environmental policies, a whistleblower policy, and policies on stakeholder engagement and consumer responsibility.[43] There is also a policy on sustainable development, which covers human rights, environmental excellence and safety standards.
- **SGX** publishes a targets and performance scoreboard for each of its material sustainability factors.[44]
- **The Stock Exchange of Thailand** (SET) has stated that it is committed to becoming a zero-carbon organisation through energy and resource management. The exchange reports having implemented an environmental management policy and a systematic approach that aligns with national laws and the international standard of LEED certification. SET's environmental performance is regularly reported to the Board of Governors and environmental awareness is fostered among all of its employees.[45]

V. DEDICATE RESOURCES OR A TEAM TO MANAGE THE EXCHANGE's SUSTAINABILITY WORK

1. Introduction

To achieve strategic and operational goals, an exchange needs the relevant resources and skills. The same applies when integrating sustainability. The WFE's 2019 Sustainability Survey found that 40 out of 63 responding member exchanges have a dedicated person or team to oversee their sustainability initiatives.[46] The dedicated person or team is, in some cases, in combination with other job titles or responsibilities, such as those relating to strategy, risk or corporate affairs.

2. Recommended practices

2.1 Allocate resources to sustainability

Processes to embed sustainability tend to be more effective when one or more people are specifically responsible and accountable for implementation. Based on the activities of the role, an exchange may prefer to appoint a dedicated sustainability officer, add sustainability elements to existing staff responsibilities, or combine both approaches. Factors to consider may be the exchange's sustainability priorities and goals at a given point in time, and practical considerations such as the availability of staff.

For those exchanges that have entered the sustainability space looking to promote disclosure and product development among issuers and investors, sustainability functions may relate mostly to stakeholder engagement, advocacy, regulatory responses and products. However, the sustainability resource can also become involved in operational aspects of sustainability management. The exchange will need to consider how internally and externally focused functions are balanced within the role; this may depend on factors such as the focus of the sustainability strategy as well as the availability of necessary skills and supporting resources.

Sustainability officers may come from diverse professional backgrounds. There is a growing suite of sustainability related qualifications which aim to encompass the wide scope of sustainability as new field on its own, but typical typical university degrees found among sustainability practitioners cover environmental science, engineering, political and social sciences, law or economics.

Regardless of what qualifications the exchange prefers for this role, certain competencies can prove valuable in supporting successful execution of the required functions, such as strategic thinking and planning, stakeholder relationship management, project management, and research and analytical skills (Table 1).

2.2 Integrate sustainability across exchange functions

The UN Global Compact's Roadmap for Integrated Sustainability notes that, as entities mature in their efforts to embed sustainability, resourcing demands can also shift.[47] For example, while a focused expert approach may be adequate to begin work, or to address particular challenges, later stages require integration into an organisation's governance, risk and compliance, and strategy and operations functions. For these latter steps sustainability knowledge, skills and functionality will gradually be embedded across the exchange. Collaboration across business divisions or units will support effective integration and management of sustainability, and avoid sustainability being isolated from other functions.

To incorporate sustainability throughout the exchange, it should:

a. Identify those functions that are influential in value-creation and execution of strategy, to engage them in integration processes;[48]

b. Prioritise functions that are necessary to drive progress on action plans – for example those functions required to achieve specific goals such as complying with the law, managing operational impacts or to drive market-facing initiatives such as the development of sustainable finance products and services.[49]

Table 1 Range of sustainability functions and competencies

Examples of activities performed by sustainability function	Competencies for success
Strategic functions: • Support/influence development and implementation of strategy • Provide sustainability input to strategic development processes • Maintain knowledge of new sustainability developments	• Strategic thinking and focus • Stakeholder relationship management skills • Communication skills (verbal and written) • Financial and budget planning • Expense management • Operational planning and management • Data management capabilities • Research and analysis capabilities • Project management skills • Change management skills
Stakeholder management: • Engage with a variety of stakeholders at multiple levels, both within and outside of the organisation • Provide guidance and advice to exchange leadership regarding sustainability priorities and progress • Communicate with staff and leadership, conduct training • Collaborate with internal teams on strategic and operational matters (e.g. with product specialists, client relationship managers, human resources, facilities functions, etc.) • Host events or training sessions	
Operational functions: • Analyse policies, conduct cost-benefit analysis, manage budgets • Oversee implementation of operational policies and monitoring performance • Manage compilation of sustainability reports, provide sustainability input to financial statements and/or integrated reports (as applicable)	

Source: Adapted from EcoCanada Career Profiles website: Sustainability Officer.

c. Communicate the expectations of each relevant business unit and function, to build an understanding of the role that the function plays in supporting a particular sustainability goal or target. It may be necessary to conduct training to ensure that the relevant function can deliver.

2.3 Build a culture of sustainability awareness

The Roadmap for Integrated Sustainability also notes that organisational culture can either support or hinder implementation of strategy and achieving operational excellence.[50] Beyond embedding sustainability into priority functions, broader cultural integration and awareness programmes should be conducted for the rest of the employees. To foster a sustainability aware culture, the exchange can take the following actions:

a. Review the values and relationships that exist within the exchange to understand how these define the existing culture and to identify which sustainability-related values and relationships can be introduced;

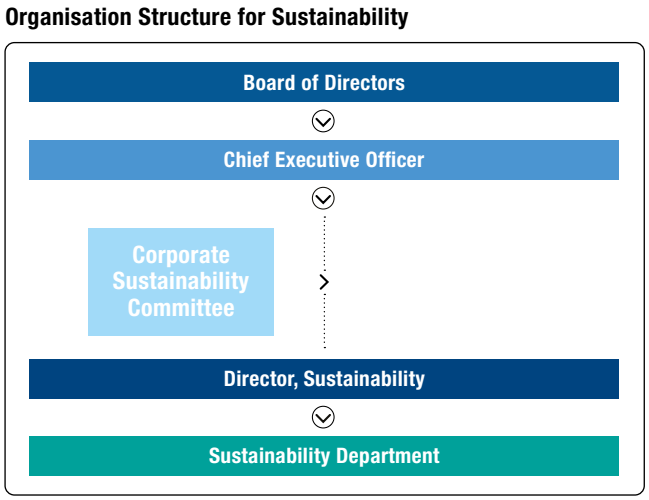
b. Communicate about the process of integration to ensure that employees understand what is being done, why it is being done (motivations and convictions as well as intended outcomes) and the role of each person;

c. Create opportunities to involve staff, whether to build general awareness and buy-in or to enable them to contribute to the process. Exchanges can build readiness among employees by showing them the positive and negative consequences of particular actions, helping them understand how sustainability applies to their everyday work, and including them in execution (e.g. in recycling and energy efficiency efforts or in social initiatives such as volunteering).[51]

3. Illustrative examples

- **Bursa Malaysia** established a sustainability department in 2017 to lead the development and implementation of sustainability strategies across the business. The department is led by a director of sustainability, who reports directly to the CEO (Figure 8).[52]
- **DFM** has had a CSR department within its human resources and strategic planning division since 2011. DFM also has a sustainability committee reporting to executive management, which comprises cross-functional members focused on overseeing and implementing the sustainability strategy.

Figure 8 **Bursa Malaysia's organisational structure for sustainability**



Source: Bursa Malaysia Sustainability Report 2018.

- **NSE Nigeria** reports that sustainability initiatives are driven by the CSR team, which operates out of the exchange's shared services division. According to the exchange, situating the CSR function within this division allows the team to drive sustainability progress as a core support function, delivering impact and measuring progress across all departments of the exchange.
- **SET** has a dedicated ESG team to promote sustainability management and advance the sustainable finance agenda within the Thai capital market and the exchange. The team is situated in the sustainable development division, led by a senior executive vice president, and reports to the corporate governance and social responsibility committee, which is composed of board members and the president. The ESG team reportedly works closely with several departments across business divisions as required.

VI. FUNDAMENTAL CONSIDERATIONS

1. Materiality

1.1 Introduction

As noted in this guidance, effectively embedding sustainability into exchange operations requires the exchange to consider relevant sustainability matters in strategy, risk and operations. However, not all sustainability issues are equally relevant to determining strategic focus areas and managing risks and opportunities. Materiality is therefore an essential filter for determining what really matters to an exchange and to its key decision makers.[53]

1.2 Factors that influence materiality

The process of determining materiality is mostly specific to the organisation. A number of factors may influence the materiality of an issue; it is useful to consider these when assessing the materiality of a topic to the exchange:

- The framework or definition of materiality that is applied;
- The status of the issue in applicable law or regulations;
- Any industry- or sector-specific concerns or developments;
- The geographic footprint of the exchange (different jurisdictions may have issues that need particular consideration);
- Specific stakeholder concerns identified through engagement;
- Operational concerns or impacts (data management issues, challenges of physical facilities, environmental impacts, skills scarcity, etc.); and
- The exchange's business model (ensuring that the integration of sustainability is fit for purpose and is aligned with strategic objectives).

When assessing the materiality of a topic, the exchange should consider a longer-term time horizon than is traditionally the case for financial information. As with strategy and risk, materiality is dynamic due to changes in influencing factors. Therefore, assessing materiality requires iterative review to determine whether identified issues remain material and ensure that emerging topics are considered.

Several sustainability-related resources discuss materiality (Box 4). Exchanges may find it useful to consider some of these when defining their approach to materiality.

1.3 What is material to exchanges?

Sustainability issues that could be material to exchanges include the following:

- Strategic matters
  - Competitive positioning and differentiation;
  - Socio-economic developments and political climate;
  - Technological disruptions; and
  - Changes to the market profile as a result of the impact of social and environmental shifts.
- Operational matters
  - Market stability and business continuity;
  - Fair labour practices;
  - Remuneration (to attract and retain scarce skills); and
  - The response to relevant environmental risks (such as climate risk and operational impacts).
- Regulatory pressures
  - Increasing regulation (e.g. on matters such as governance and disclosure).

SASB identifies sustainability issues that are likely to affect the financial condition or operating performance of companies within an industry and sets specific sustainability accounting standards on material topics for identified sectors. For security and commodity exchanges, the material topics identified include promoting transparent and efficient capital markets, managing conflicts of interest, and managing business continuity and technology risks.[54]

Some analysts, ratings agencies and index providers also produce assessment reports that identify the sustainability issues that investors consider important for the industry or particular exchange.

The WFE's ESG Guidance and Metrics notes that there is a range of views on materiality.[55] To aid an understanding of the view on materiality, the guidance recommends disclosure of the following:

- How materiality was determined and who was involved in determining which issues are material;
- Which issues are considered to be material, and how it was decided that these are material (process, timeframe, relevant legal framework, etc); and
- How the identified issues are integrated into corporate strategy and what impact they could have on value creation.

1.4 Illustrative examples

- The Spanish stock exchange **Bolsas y Mercados Españoles** (BME) reports that it conducts a materiality analysis to identify the key issues that may affect the decisions of its stakeholders or which are critical to the long-term success of the exchange.[56] The activities carried out for this materiality analysis consist of:

Box 4 Resources providing guidance on materiality

- The Corporate Reporting Dialogue has published a statement setting out the common foundational principles of materiality across CDP, the Climate Disclosure Standards Board, the GRI, the International Accounting Standards Board, the IIRC, the International Organization for Standardization (ISO), and SASB.[a]
- The SSE initiative's Model Guidance for ESG Reporting discusses materiality and relevance as guiding principles.[b]
- The European Commission's Non-Financial Reporting Directive has a double materiality perspective (Figure 9). Financial materiality is mostly relevant to investors, in the broad sense of affecting the value of the company. Social and environmental materiality deals with the impacts of the organisation's activities and involves investors as well as broader stakeholders such as citizens, consumers, employees, business partners, communities and civil society organisations. It is noted however, that these two perspectives may already intersect and will in the future likely overlap increasingly, as financially material business opportunities and/or risks from social and environmental impacts become better understood.[c]

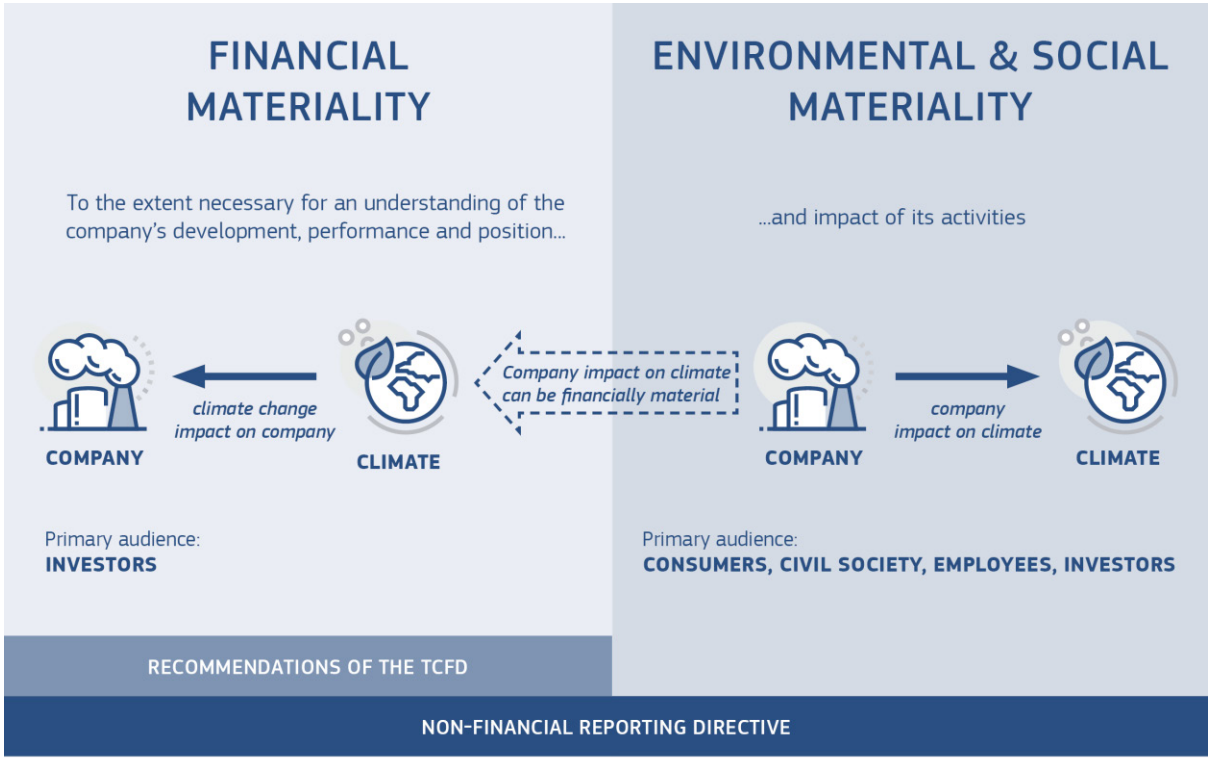
Source: SSE and WFE.

[a] Corporate Reporting Dialogue (2016) Statement of Common Principles of Materiality.

[b] Sustainable Stock Exchanges initiative (2015) Model Guidance On Reporting ESG Information To Investors - A Voluntary Tool For Stock Exchanges To Guide Issuers, pages 14-15.

[c] European Union (2019) Guidelines on non-financial reporting: Supplement on reporting climate-related information, page 6.

Figure 9 The double materiality perspective of the EU Non-Financial Reporting Directive (in the context of reporting climate-related information)



Source: European Union.

- Meetings with managers and directors in key areas of the company;
- Benchmarking against other international companies in the stock exchange sector;
- Analysis of investor requirements based on information requested through initiatives such as the Dow Jones Sustainability Indices, CDP and the FTSE4Good index series;
- Analysis of key aspects of other initiatives in which BME participates, such as the SSE and the United Nations Global Compact;
- Analysis of reporting recommendations and press dossiers compiled over the previous year; and
- Analysis of policies, including the code of conduct, crime prevention guidelines, tax policies and principles, and policies for the processing and transmission of insider information.

- **Bursa Malaysia** mentions five broad categories as material factors, mapped to the SDGs and which form the structure of its sustainability report. The exchange reports that the process for determining the material factors includes the following steps:[57]
  - An environmental scan of sustainability frameworks, rankings and indexes as well as peer exchanges' sustainability disclosures;
  - Focus group sessions and an online survey of internal and external stakeholders;
  - One-on-one interviews with senior management; and
  - Final approval by the corporate sustainability committee and board of directors.
- The **Egyptian Exchange** (EGX) reports on the following material issues:[58]
  - Managing the exchange's impact on the environment; and
  - Being a responsible employer and contributing to the community, particularly through a focus on gender equality.
- The **London Stock Exchange Group** reports that it conducts a materiality review where items are cross-referenced using both internal and external evaluators. Internally, activities are grouped into pillars and evaluated in terms of their relevance to six impact areas (Figure 10) and externally against the SDGs and GRI materiality definitions. If the item is deemed to be material against this framework, it is reported.[59]
- The **New Zealand Exchange** (NZX) reports using the GRI materiality definition to determine and fine-tune corporate sustainability relevance.[60] Material issues inform its strategic priorities, sustainability approach and reporting, and include people (diversity and inclusion) and governance (NZX's

Figure 10 London Stock Exchange Group impact areas and materiality review

Convene	Grow	Disclose	Transition	Develop	Sustain
Collaboration with the financial industry, charities, governments and companies is important to progress solutions for the move to a low carbon economy and sustainable businesses.	Supporting the growth of companies and the economy, and access to funding, provides stability and safety, and generates jobs for a growing population.	The publication and reporting of Group ESG activities in accordance with rating agency sustainability recommendations addresses the growing investor base that include ESG factors into their investment process.	Reducing market risk through clearing, and moving to a sustainable, stable business model is systemically important given the central role of LSEG in the economy and the effects of climate change.	Continued business innovation, the increase in employee expertise and diversity, and setting ambitious sustainability goals strengthen our industry position and increase stability for stakeholders and the economy.	Maintaining support for underprivileged communities, developing economies and the environment is important for the future stability of all stakeholders and the communities in the areas in which we operate.
SDGs: 12 Responsible Consumption and Production; 13 Climate Action; 17 Partnerships for the Goals	8 Decent Work and Economic Growth	12 Responsible Consumption and Production; 13 Climate Action	12 Responsible Consumption and Production; 13 Climate Action	5 Gender Equality; 17 Partnerships for the Goals	5 Gender Equality; 13 Climate Action; 17 Partnerships for the Goals

Source: London Stock Exchange Group Corporate Sustainability Report 2018.

role as a market operator and listed company in promoting high standards of market behaviour)

- **NSE Nigeria** reports that established stakeholder engagement processes form the basis for defining material issues, which are then mapped in terms of the level of economic, environmental or social impact and potential influence on stakeholder decisions (Figure 11).[61]

2. Stakeholder engagement

2.1 Introduction

Stakeholder engagement plays a critical role across each of the focus areas. Awareness of the relevant stakeholders and their sustainability-related needs and interests will ensure that an exchange is positioned to be responsive to existing stakeholder concerns and to anticipate concerns that may become priorities in the future.

To optimise stakeholder engagement on sustainability, exchanges should consider:

a. Mapping the stakeholders of the exchange and the relevant sustainability issues to identify any gaps in coverage of engagement with particular stakeholders or on particular topics.

b. Prioritising stakeholders based on their value to the exchange, their level of interaction with the exchange and the extent to which they may be affected by the exchange's activities. Note that some stakeholders may have an indirect relationship with the exchange (such as asset owners).

c. Developing engagement and feedback processes (or adapting existing processes) to ensure the integration of sustainability issues.

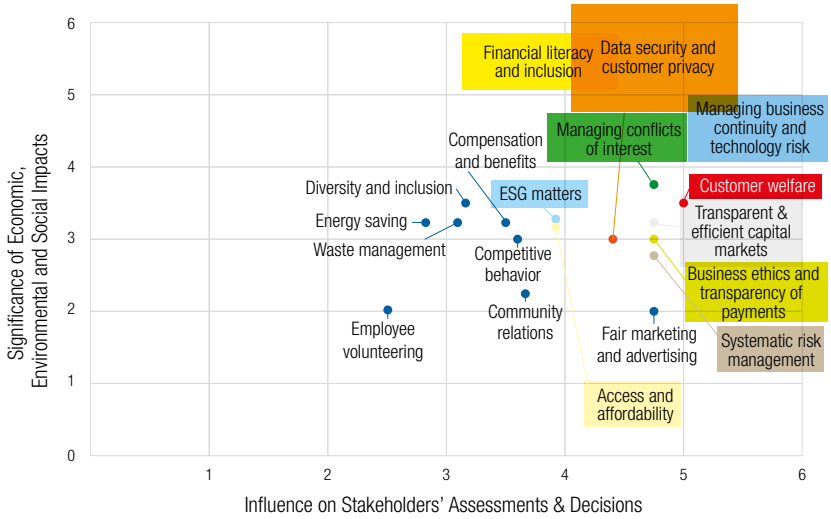
Engaging with stakeholders on sustainability should be an ongoing process which aims to:

- Obtain input to processes of determining material matters, risks and opportunities;
- Provide feedback on strategies and actions being implemented as well as progress; and
- Address matters of concern and resolve issues.

2.2 Illustrative examples

- **B3** in Brazil organised a roadshow on ESG to enhance proactive engagement with stakeholders in Europe. The exchange focused on ESG investors, selecting a set of ten institutional investors in Frankfurt and London. The exchange reports that the stakeholder interactions provided valuable knowledge about how investors approach ESG analysis, helping to further clarify the role and importance of B3's efforts to promote good ESG practices in its market and in its own business.
- **DFM** reports that it collaborates with its regulator, government bodies, fellow exchanges, governance and investor relations institutions, sustainability consultants, corporate advisers and universities, in line with its stated view that ongoing collaboration with stakeholders is key to the successful delivery of DFM's sustainability plan.[62] DFM says that an integral part of its strategic plan is to ensure the satisfaction of stakeholders within the communities in which the exchange works. DFM has been undertaking stakeholder satisfaction surveys since 2013 and has recently adopted a system

Figure 11 The Nigerian Stock Exchange's materiality map



Legend:

1	Data security and customer privacy	10
2	Managing business continuity and technology risk	8,5
3	Customer welfare	8,5
4	Financial literacy and inclusion	8,5
5	Transparent & efficient capital markets	8
6	Business ethics and transparency of payments	7,75
7	Systematic risk management	7,5
8	Managing conflicts of interest	7,42
9	ESG matters	7,17
10	Access and affordability	7,17

Source: The Nigerian Stock Exchange 2017 Sustainability report.

to evaluate stakeholder satisfaction through client service affairs 'happiness meter evaluations'.

- **SET** states that it engages with internal and external stakeholders on various material sustainability topics, in alignment with the expectations of each stakeholder group (Figure 12).[63]

3. Reporting

3.1 Introduction

Public sustainability reporting is a topic that exchanges are already familiar with, particularly given their efforts in promoting increased issuer disclosure. As of the third quarter of 2019, nearly half of all stock exchanges were providing guidance to issuers on how to report ESG information, and nearly a quarter had a listing rule requiring ESG disclosure from issuers.[64] Given rising expectations for transparency, exchanges recognise the need to promote reporting in their markets but also to pursue reporting by the exchange itself.[65]

A growing number of exchanges publish their own sustainability reports. The SSE's database shows, as of the third quarter of 2019, 46 stock exchanges reporting annually on sustainability (Figure 13).[66]

While transparency regarding an exchange's sustainability performance is important, disclosure should be seen as the result of a process rather than an end in itself.[67] Starting with the actions described in the different focus areas, and ensuring that the appropriate systems, structures and policies are in place, will allow an exchange to provide quality disclosure on sustainability priorities, metrics and progress. The extent of reporting can gradually be broadened as integration and data availability increase.

Figure 12 Stakeholder engagement by the Stock Exchange of Thailand

SET Sustainability Framework	Material Topics	Stakeholders					
		Internal	External				
		Employee	Listed companies and entrepreneurs	Intermediaries	Investors	Regulators	Society
Sustainability Management	Good corporate and capital market governance	●	●	●	●	●	
	Sustainability risk management	●	●	●	●	●	●
	Developing products, services and innovations for sustainability	●		●			
Market Growth	Developing the quality of listed companies		●				
	Developing the quality of investors				●		●
	Developing the quality of securities professionals			●			
Employee Development	Fair employment practices	●					
	Employee development	●					
	Employee well-being	●					
Social Development	Promoting financial literacy for public				●		●
	Promoting social enterprises		●				●
	Engaging and developing society						●
Environmental Management	Efficient resource and energy use	●	●				●

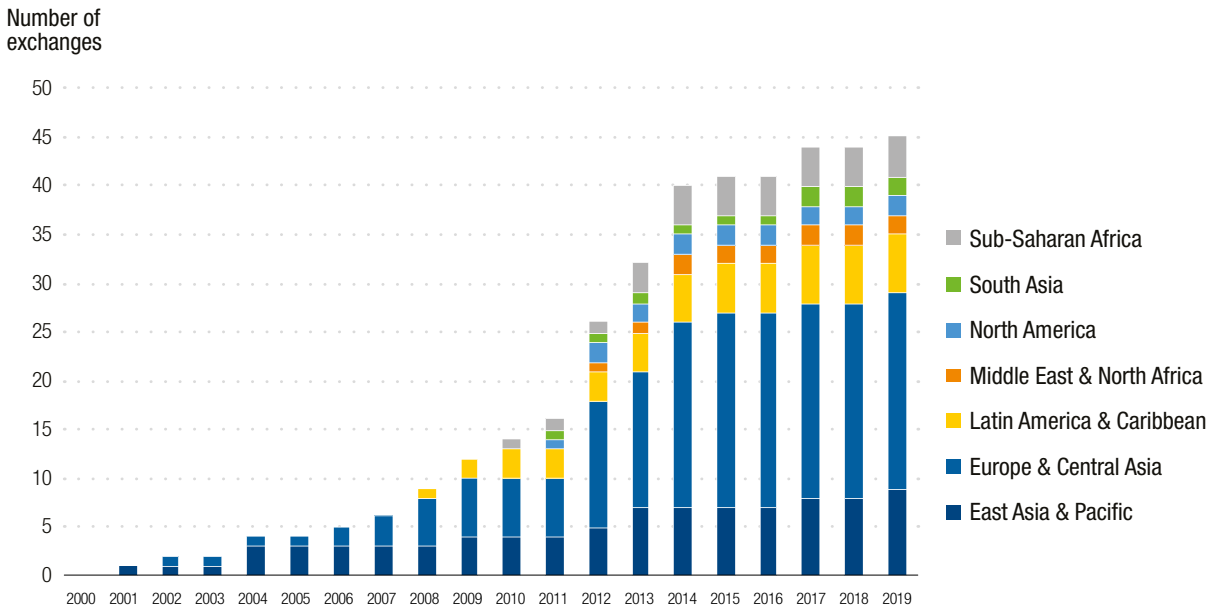
Source: Stock Exchange of Thailand Sustainability Report 2018.

A range of reporting tools and frameworks exist (Box 5). Some are mandatory in certain jurisdictions, while others provide voluntary tools, guidance or recommendations.[68] They can be either comprehensive in coverage or topic-specific, and global, regional or national in application. While laws must be complied with, an exchange may wish to review whether it can apply one (or more) of these frameworks to its sustainability reporting. Aligning with generally accepted reporting frameworks can ensure that reporting is comparable and complete. The recommendations incorporated in the most prominent frameworks go beyond basic data to cover strategic management and governance of sustainability, which can also support further operational integration.

3.2 Illustrative examples

- **BME** has published an annual CSR report since 2007. The report is now named the Consolidated Non-financial Information Report due to new regulations, and forms part of the exchange's annual report. It is compiled in accordance with the GRI Standards and new local legislation and includes sustainability information considered as material.[69]
- **Bursa Malaysia** first reported on its sustainability practices in its 2006 annual report. Since 2011, the exchange has issued an annual sustainability report, gradually expanding the level of disclosure to adherence with the 'Core' option of the GRI Standards, in line with the exchange's own listing requirements on sustainability disclosure and the criteria of the FTSE4Good Bursa Malaysia sustainability index. Similarly, since 2016 the exchange has adopted a phased approach towards integrated reporting. The board conducts oversight of its integrated report and the sustainability report.[70]
- **HKEX** adopted the GRI guidelines for its CSR reports from 2009 to 2016, and has since prepared its CSR reports in accordance with GRI Standards.[71]
- The **Santiago Exchange** in Chile published its first integrated report, based on GRI guidelines, in April 2017. The exchange publishes the information in both Spanish (the local language) and English (for an international audience).
- **SET** has been disclosing sustainability data incrementally since 2001, publishing an annual sustainability report in line with GRI guidelines since 2012. The most recent report (for 2018) has been verified by the GRI as "in accordance" with the 'Core' option of the GRI Standards. The GRI also helps to verify the report's materiality disclosures and SDG mapping. The report highlights material sustainability topics and stakeholder engagement approaches, in line with the SET sustainability framework. Performance is reported on and benchmarked against targets and indicators, with a summary table of overall ESG performance at the end of the report.[72]
- The **Shanghai Stock Exchange** released its second Social Responsibility Report in April 2019. The report was prepared with reference to both the GRI standards and the China Corporate Social Responsibility Reporting Guidelines (CASS-CSR3.0). It aims to publicise the exchange's social responsibility strategy and relevant practices in implementing the "Vision and Action Plan for Serving Green Development and Promoting Green Finance (2018-2020)".[73]

Figure 13 Growth and coverage of sustainability reporting by exchanges



Source: SSE.

Box 5 Resources providing guidance on reporting

The below are the most widely used reporting frameworks.

- The GRI Standards cover disclosure indicators, including a comprehensive range of sustainability topics and which also require coverage of materiality processes, governance and strategy.[a]
- SASB is premised on the integration of sustainability accounting standards, supported by a system of governance including management involvement, board oversight and internal control that is substantially similar to what is used for financial reporting.[b]
- The IIRC's Integrated Reporting (<IR>) Framework[c] promotes the concept that integrated reporting is based on integrated thinking, explicitly connecting an organisation's strategy, governance, performance and prospects.[d]
- The EU Non-Financial Reporting Directive requires large companies to disclose certain information on the way they operate and manage social and environmental challenges.[e]

Topic-specific frameworks include those developed by CDP and the recommendations of the TCFD, a global group established by the Financial Standards Board after the G20 summit in 2015. The TCFD's recommendations, released in June 2017, offer a disclosure framework built around providing financial market participants with the information they need about how climate-related issues may affect their companies or investments.[f] Focus areas include governance and risk management around climate change as well as the actual and potential impacts of climate change on the business, its strategy and planning, and the metrics and targets used to assess and manage climate risks and opportunities.

The WFE's ESG[g] Guidance discusses qualitative aspects of report preparation, including oversight, links to business value, determination of materiality, and quality and frequency of reporting, while the Metrics identify over 30 baseline metrics generally considered material across a range of sustainability indicators.[h] While this guidance is mainly aimed at the market-facing efforts by exchanges to support disclosure by issuers, the guidance aspects and metrics can also be considered a relevant starting point for exchanges to identify and report on as they relate to their own businesses as well.

Source: SSE and WFE.

[a] GRI (2016) GRI Standards, see particularly GRI 102: General Disclosures and GRI 103: Management approach.
[b] Sustainability Accounting Standards Board (2018), Standards Overview and Application Guidance.
[c] IIRC (2013) International Integrated Reporting Framework.
[d] IIRC (2016) Creating value - the cyclical power of integrated thinking and reporting, page 4.
[e] European Commission website Non-Financial Reporting.
[f] TCFD (2017) Recommendations of the Task Force on Climate-Related Financial Disclosures.
[g] World Federation of Exchanges (2018) WFE ESG Guidance and Metrics.
[h] BME (2018) Annual Report 2018 Consolidated Non-Financial Information Statement (Corporate Social Responsibility Report) pages 324 and 327.

4. Capacity building

4.1 Introduction

As is evident from the focus areas, embedding sustainability into exchange operations relies on the leadership and staff being informed about trends and developments in relation to sustainability and then being equipped with the knowledge, skills and abilities necessary to act. While building capacity can manifest as a focus on education and training, the ultimate goal is to ensure that individuals are empowered, and the organisation strengthened through establishment of new institutions or strengthening old ones.[74]

To support capacity building efforts, an exchange may wish to determine a baseline that informs where there are gaps in knowledge and/or systems.

Approaches for capacity building can include the following:

- Targeted courses presented in-person or via online e-training;
- Topic presentations by experts;
- Staff presentations or newsletters;
- Site visits; and
- Coaching and mentoring.

4.2 Illustrative examples

- **Borsa Istanbul** states that it has undertaken training programmes for staff on its code of ethics, occupational health and safety and the EU's General Data Protection Regulation.
- **DFM** notes that it has conducted training sessions for key employees who can act as sustainability champions across the business to help embed ESG into day-to-day operations. The DFM sustainability committee has reportedly also engaged employees in two-day training sessions to increase understanding of sustainability and to begin the process of sustainability target-setting.

VII. CLOSING THOUGHTS

The imperative of sustainability as embodied in the SDGs demands deep transformative change from both business and public policy. For exchanges, the incorporation of sustainability considerations is likely to be a determinant of long-term performance and resilience in a changing world.[75] Indeed, evidence is growing that the business case for sustainability is a complementary proposition rather than a trade-off: embedding sustainability enables the business to capture new opportunities, mitigate risks, enhance its reputation and promote innovation.[76]

The blueprint provided within this guidance is intended to serve as a tool for translating WFE Sustainability Principle 5 into practical action. This could enhance the efficacy of market-facing sustainability efforts and spur innovative ways to finance sustainability, thus playing a role in supporting value creation by the capital markets for society and the environment. It could also provide other benefits to the business, such as managing downside risk, optimising operational efficiency and cost savings, strengthening stakeholder relations and achieving better growth.[77]

Exchanges are invited to use the examples in this report to inform their own efforts to embed sustainability within their operations. The SSE and WFE aim to support their members in these efforts and help to share lessons learned along the way.

ANNEX I – THE WFE SUSTAINABILITY PRINCIPLES

1. Exchanges will work to educate participants in the exchange ecosystem about the importance of sustainability
2. Exchanges will promote the enhanced availability of investor-relevant, decision-useful ESG information
3. Exchanges will actively engage with stakeholders to advance the sustainable finance agenda
4. Exchanges will provide markets and products that support the scaling-up of sustainable finance and reorientation of financial flows
5. Exchanges will establish effective internal governance and operational processes and policies to support their sustainability efforts

Source: WFE.

ANNEX II – OVERCOMING BARRIERS

Like all businesses, exchanges may confront barriers to integrating sustainability. This table outlines some of the common barriers exchanges may face and what section of this guidance can assist them to address these barriers.

Barrier	Relevant area of guidance
Lack of buy-in from leadership	• Governance and risk management • Stakeholder engagement • Capacity building
Fear of jeopardising existing business and customer bases, or losing competitive advantage	• Strategic planning • Managing operational impacts • Materiality • Stakeholder engagement • Capacity building
Prioritising short-term gains rather than longer-term and sustainable benefits	• Strategic planning • Governance and risk management • Managing operational impacts
Concerns about managing conflicts between commercial and public interests	• Strategic planning • Governance and risk management • Materiality • Stakeholder engagement • Reporting
Decoupled business and sustainability strategies due to cultural and departmental silo approaches	• Strategic planning • Dedicated resources • Materiality • Stakeholder engagement
Resistance to change due to entrenched processes and culture	• Managing operational impacts • Dedicated resources • Stakeholder engagement • Capacity building

Source: Adapted from Network for Business Sustainability (2016) Business models for shared value - A Guide for Executives.

ANNEX III – SSE ADVISORY GROUP MEMBERS

The SSE and WFE gratefully acknowledge the valuable inputs to this document made by the experts listed here.

The advisory group was chaired by **Olga Cantillo, CEO, Panama Stock Exchange**

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United States	New York Stock Exchange*	Brookly McLaughlin
United States	SASB	Anton Gorodniuk
United States	SASB	Sonal Dalal

* These exchanges are also WFE members

Note: The views expressed in this paper are those of UNCTAD, UN Global Compact, UN Environment, the PRI and the WFE unless otherwise stated; the paper does not necessarily reflect the official views of individual members of the advisory group or their respective organisations.

ANNEX IV – OTHER CONTRIBUTING WFE MEMBERS

The SSE and WFE gratefully acknowledge the valuable feedback from members of the WFE Sustainability Working Group. Besides the WFE members who participated in the SSE Advisory Group and the WFE Sustainability Working Group, we also thank the following WFE members for their contributions to the information collection exercise that helped in producing this guidance.

- Amman Stock Exchange
- Athens Stock Exchange
- Bolsa de Valores de Lima
- Bolsa y Mercados Españoles
- Colombo Stock Exchange
- Dhaka Stock Exchange
- National Stock Exchange of India
- New Zealand Exchange
- Palestine Exchange
- Six Swiss Exchange
- Taiwan Stock Exchange

ANNEX V – LIST OF EXAMPLES

Exchange	Section	Page
B3 Brazil	VI.2	31
Bolsa de Valores de Lima	III	20
Bolsas y Mercados Españoles	VI.1, VI.3	29, 33
Borsa Istanbul	II, III, VI.4	14, 20, 34
Bursa Malaysia	II, III, V, VI.1, VI.3	14, 20, 26, 30, 33
Dubai Financial Market	II, III, IV, V, VI.2, VI.4	14, 20, 23, 26, 31, 34
Egyptian Exchange	VI.1	30
Johannesburg Stock Exchange	III	20
Hong Kong Exchanges and Clearing	II, III, VI.3	14, 20, 33
London Stock Exchange Group	VI.1	30
National Stock Exchange of India	IV	24,
New Zealand Exchange	VI.1	30
Nigerian Stock Exchange	II, V, VI.1	14, 27, 31
Santiago Exchange	II, III, VI.3	16, 20, 33
Shanghai Stock Exchange	VI.3	33
Shenzhen Stock Exchange	II	16,
Singapore Exchange	II, III, IV	16, 20, 24
Stock Exchange of Thailand	IV, V, VI.2, VI.3	24, 27, 32, 33

ENDNOTES

1 Business Roundtable (2019) "Statement on the Purpose of a Corporation"

2 OECD (2016), OECD Business and Finance Outlook 2016, Chapter 4: Changing business models of stock exchanges and stock market fragmentation

3 UN Global Compact website Roadmap for Integrated Sustainability

4 World Federation of Exchanges (2018) WFE Sustainability Principles

5 Terminology may vary between jurisdictions and ownership models of exchanges: for example, non-demutualised exchanges may not have a board of directors. This guidance uses "leadership" and "governing body" interchangeably to refer to the highest level of leadership, which should be read as to include the highest body responsible for governance or supervision of the organisation, including the board where it is present.

6 The WFE's Annual Sustainability Survey (2018) reveals the high level of exchanges' engagement with sustainability. In 2018, 90% of the responding exchanges had engaged in some form of ESG initiatives, of which 70% of them had made formal commitment to sustainability.

7 Examples include: United Nations Global Compact, Roadmap for Integrated Sustainability; SustainAbility (2015) Sustainability Incorporated; Network for Business Sustainability (2016) Executive Guide: Business Models for Shared Value; Gond J.P., Grubnic S., Herzig C., Moon J. (2012) Configuring management control systems: Theorizing the integration of strategy and sustainability, Management Accounting Research, Volume 23, Issue 3, 205–223, 2012; Lozano Rodrigo (2012) Towards better embedding sustainability into companies' systems: an analysis of voluntary corporate initiatives, Journal of Cleaner Production, 25:14-26.

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9 World Economic Forum (2019) Global Risks Report 2019

10 One example is the nationally determined contributions that countries have proposed as part of their involvement in the Paris Agreement, struck in 2015 by parties to the UNFCCC to combat climate change and to accelerate and intensify the actions and investments needed for a sustainable, low-carbon future.

11 Accounting for Sustainability (A4S) (2018) Essential Guide To Strategic Planning, Budgeting And Forecasting, page 24

12 UNGC Roadmap for Integrated Sustainability, Strategic Integration

13 Borsa Istanbul (2018) 2018 Annual Integrated Report, pages 1,14,16-17

14 Bursa Malaysia (2018) Board Charter paragraph 5.1.3 page 11

15 Bursa Malaysia (2018) Sustainability Report 2018, page 8 and Integrated Annual Report 2018, pages 10-11

16 HKEX website Corporate Social Responsibility page

17 NSE Nigeria (2016) 2016 Sustainability Report, page 5

18 NSE Nigeria website Corporate Social Responsibility

19 Santiago Exchange press release, "Santiago Exchange launched New Brand that potentializes its IT and Sustainability Drivers", 19 June 2019

20 Santiago Exchange website, Sustainability and Innovation section, Sustainability Policy

21 Singapore Exchange (2018), Annual Report 2018, pages 30-31

22 G20/OECD (2015) Principles of Corporate Governance, Foreword, page 3

23 Institute of Directors of Southern Africa (2016) King IV Report on Corporate Governance for South Africa, Fundamental Concepts, pages 20-21

24 G20/OECD (2015) Principles for Corporate Governance, Principle VI Responsibilities of the Board, page 45

25 See the PRI website and its publication, Integrating ESG issues into executive pay. The PRI plans to undertake further work on this topic during 2020.

26 For example, through regulatory interventions such as Basel III and MiFID II

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29 Bursa Malaysia (2018) Board Charter, pages 6-8 and Governance and Financial Reports 2018, pages 7-8

30 HKEX website Corporate Social responsibility page: Our Approach: Governance Structure

31 Johannesburg Stock Exchange (2018) Social Value Report 2018, page 24

32 Singapore Exchange (2018) Annual Report, page 40

33 The Committee of Sponsoring Organizations of the Treadway Commission's Enterprise Risk Management

- Integrated Framework

34 Singapore Exchange (2018) Annual Report 2018, page 41

35 Relevant inputs and outcomes are set out in IIRC (2013), International Integrated Reporting Framework, and may offer a useful resource in this regard

36 SustainAbility (2015) Sustainability Incorporated: Integrating Sustainability into Business; A Guide for Sustainability Practitioners, pages 45-47

37 See, for example, MeetGreen (2014) Sustainability Policy Template

38 Accounting for Sustainability (A4S) (2018) Essential Guide To Strategic Planning, Budgeting And Forecasting, page 124

39 Adapted from Accounting for Sustainability (A4S) (2018) Essential Guide To Strategic Planning, Budgeting And Forecasting

40 B3 (2017) 2017 Annual Report, page 17

41 Dubai Financial Market (2018) Annual Report 2018, pages 34-36

42 NSE India (2017) Business Responsibility Report, About the Report

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44 Singapore Exchange (2018) Annual Report 2018, pages 46-51

45 Stock Exchange of Thailand (2018) Sustainability Report 2018, pages 54-59

46 World Federation of Exchanges (2019) WFE Sustainability Survey April 2019: Exchanges Advancing Sustainable Finance, page 6

47 UN Global Compact Roadmap for Integrated Sustainability, Prioritizing functions, page 1

48 See the UN Global Compact Roadmap for Integrated Sustainability website for a list of specific organisational functions and guidance on integrating sustainability into each.

49 Ibid, Prioritizing functions, pages 1-2

50 Ibid, Cultural Integration, page 1

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53 Dinah Koehler and Eric Hespenheide, "How materiality drives improved sustainability reporting", Greenbiz, 28 January 2014

54 The current standards can be downloaded from the SASB website

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56 BME (2018) Annual Report 2018, Consolidated Non-Financial Information Statement (Corporate Social Responsibility Report) pages 408-412

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58 Egyptian Exchange (2016) Sustainability Report, page 28

59 London Stock Exchange Group (2018) Corporate Sustainability Report 2018, page 7

60 New Zealand Exchange (2018) Annual Report 2018 Page 27

61 NSE Nigeria (2017) Sustainability Report 2017, pages 16-17

62 WFE (May 2019) Focus, "Embedding ESG: an exchange perspective"

63 Stock Exchange of Thailand (2018) Sustainability Report 2018, page 20

64 Source: SSE

65 World Federation of Exchanges (2018) WFE ESG Guidance and Metrics, page 3

66 SSE (2018) 2018 Report on Progress

67 As noted by the World Federation of Exchanges (2018) WFE ESG Guidance and Metrics, page 3

68 The 2016 edition of the Carrots and Sticks Report, produced by KPMG, the GRI, UNEP and the University of Stellenbosch Business School noted nearly 400 sustainability reporting instruments in 64 countries.

69 BME (2018) Annual Report 2018 Consolidated Non-Financial Information Statement (Corporate Social Responsibility Report) pages 324 and 327

70 Bursa Malaysia (2018) Sustainability Report, pages 2 and 83 and Integrated Annual Report, page 3

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74 UNDP (2009) Capacity Development: A UNDP Primer page 5

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