

## **CLIMATE CHANGE RISK FOR SUSTAINABILITY: THE IMPLICATION ON FINANCIAL AND ENVIRONMENT, SOCIAL AND GOVERNANCE REPORTING**

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### **ABSTRACT**

This study examines the impact of climate change risk on financial reporting and the disclosure of non-financial information related to environmental, social, and governance (ESG) aspects. It also extends the analysis to the use of assurance standards to ensure the credibility of ESG reporting. Drawing upon professional and industry reports, as well as academic research, this study utilises data from 2019 to 2020 to assess the current state of ESG reporting and its implications. The findings reveal the significant influence of climate change risk on financial reporting, highlighting the need for auditors to incorporate these risks into financial statement audits. Moreover, the inclusion of non-financial information, such as ESG or sustainability reporting, has become integral to corporate reporting, as stakeholders increasingly rely on such information to inform investment and decision-making processes. By exploring the interplay between climate change risk and financial reporting, this study contributes to a deeper understanding of ESG frameworks, guidelines, and standards companies adopt when preparing sustainability reports for their stakeholders. The study demonstrates that adopting sustainable reporting

practices enhances a company's trustworthiness among stakeholders. It also emphasises the need for further research into current ESG practices, the application of accounting standards, and stakeholder acceptance to advance sustainability efforts. This research provides valuable insights into improving the effectiveness and reliability of ESG reporting in the context of climate change risk.

**Keywords:** Sustainable reporting, environment, climate change, audit, ESG framework.

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## 1.0 INTRODUCTION

The COVID-19 pandemic has heightened awareness to set the world on a more sustainable footing in new urgency (PricewaterhouseCoopers (PwC), 2021). Investment instruments labelled as sustainable have been growing considerably (IOSCO, 2020; PwC, 2019). Global investors' appetite for responsible investment has been growing (PwC, 2019). In addition, there exists a need for climate change information, because investors consider climate change and other important matters (i.e., environmental, social and governance (ESG)) into their investment decision making and portfolio management strategies (IAASB, 2020b). As such, ESG reporting has become the key source of non-financial information for investors' decision making.

Studies have acknowledged that investors consider companies' ESG-related information, together with their financial statements, into their decision-making process. Companies who provide accountable non-financial information, such as ESG reports, tend to gain more investment and stock market value (Albitar et al., 2020). The stock prices of companies with high ESG scores outperform those of other businesses (Albuquerque et al., 2020; Ferriani & Natoli, 2020), and the volatility of stock returns is lower for companies with high ESG scores (Albuquerque et al., 2020). Despite the decline in sales, the operating profit margins of companies with high ESG scores increased in the first quarter of 2020 (Albuquerque et al., 2020). Contrarily, other group of companies and corporations barely follow the ESG rules and regulations, ignoring ESG issues in their corporate reporting. Many studies have indicated that such companies lag in securing a stable stock market value and annual revenue in recent years than companies who are highly cautious in ESG issues (Atan et al., 2018;

Huang, 2019). These studies are consistent with the results of industry survey performed by firms such as the PwC.

In its 2019 private equity survey, the PwC noted that 81% of respondents reported that their board members have received reports on ESG issues at least once a year. In comparison with the 2016 poll, 67% of respondents have integrated relevant Sustainable Development Goals (SDGs) into their investment choice. The study also showed that 35% of respondents have a dedicated team for managing responsible investment compared with 27% in the 2016 survey. In addition, 60% of respondents have implemented certain measures to address human rights issue. Moreover, 91% of respondents have either adopted or are currently developing a responsible investment or ESG policy, and 83% of respondents have embedded climate-related risk into their investment portfolio (PwC, 2019).

As discussed above, management now frequently refers to ESG reporting, which includes climate change information, when making investment decisions. The need for climate change information will have a significant influence on many stakeholders, including those who prepare such information (e.g., managers, auditors and standard setters). Given that financial statement has been used for a very long time, its users are familiar with the accounting standards that are used to prepare such financial information; conversely, the standards used for the preparation of climate change or other important non-financial information in ESG reporting are varied and thus lack consistency (Adam & Abhayawansa, 2022). Moreover, ESG reporting may contain some greenwashing information, which may damage credibility (PwC, 2022). In its 2022 Global Investor Survey, the PwC noted that 87% of investors are concerned that ESG reports contain at least some greenwashing. As such, the lack of consistency and concern on greenwashing may result in certain challenges for management, auditors and other associated bodies in relation to ESG reporting.

The United Nations (UN) proposed 17 SDGs, which include ‘to protect the planet from degradation, including through sustainable consumption and production, sustainably managing its natural resources and taking urgent action on climate change, so that it can support the needs of the present and future generations’ (Nations, 2015). The announcement of the UN SDGs has demonstrated that, in addition to the government sector, the private sector has been extensively relied upon to address some of the world’s most pressing concerns. In September 2019, at a UN climate summit, the Net Zero Asset Owner Alliance, which comprises insurers and pension funds managing US\$2.3 trillion, pledged a commitment to rebalance their portfolio away from carbon-based industries to ensure that their investment will be carbon neutral by 2050 (Green, 2019). In November 2021, Nordic and British pension funds pledged their commitment to

invest US\$130 billion by 2030 in their green investments to fight climate change (Abnett et al., 2021). Green financing actively contributes to a company's increased profitability and sustainability, both of which promote environmental protection (Abdul Razak & Ali, 2023). Climate change has become an imperative agenda for companies and institutional investors to contribute to the SDGs through their business activities, asset allocation and investment decisions

Climate change risk affects most, if not all, entities with different degrees (IAASB, 2020b). As such, as climate change is considered material information, such risk should be considered when a company is preparing its financial statements for stakeholders' use. However, nowadays, investors do not only consider climate change risks when making investment decision; they also consider other social responsibilities and governance aspects of a company, such as ESG. Thus, ESG or sustainability reporting has become other source of information for decision making. However, it does not have a consistent framework, guideline or standard.

Previous studies have mostly focused on the influence of climate change risk on different productive sectors, ESG and firm performance and financial reporting in fraud detection but ignored the issue of the influence of an ESG framework on sustainability reporting (Amiram et al., 2018; Huang, 2019; Sani et al., 2020). Moreover, the literature on the relevance of climate change and sustainability reporting as part of corporate reporting is limited. Thus, the current paper aims to explore the influence of climate change risk on financial reporting and understand the common ESG frameworks, guidelines and standards used by entities on preparing their sustainability reporting. This study also explores the responsibilities of managers and auditors in relation to climate change risk and assuring ESG reporting.

This study contributes to the literature by exploring the influence of climate change risk on financial reporting and providing insights on common frameworks, guidelines and standards in preparing sustainability or ESG reporting. The rest of the paper is structured as follows. Section 2 takes a cursory look on entities affected by climate-related risk. Section 3 presents an analysis of management's responsibilities towards climate change risk. Section 4 presents auditors' responsibilities in responding to climate change risk during an audit. Section 5 discusses the commonly used frameworks, guidelines and standards for ESG or sustainability reporting. Finally, Section 6 concludes the study.

## **2.0 INFLUENCE OF CLIMATE CHANGE RISK**

Most, if not all, entities are likely to be affected by climate change, either significantly or insignificantly. Certain industries that are more likely to be affected significantly by climate change include energy, transportation, agriculture and forestry. Other entities may be indirectly affected by climate change, as climate change may affect supply chains, customers, financing, insurance and laws and regulations (IAASB, 2020b). For example, as the largest purchaser of raw materials globally, the food and beverage industry can be exposed to significant climate-related risks due to disruption in the supply of raw materials, resulting in significant price increases and severe volatility (PwC, 2020). Past research has indicated that drought, at regional and national levels (in Germany), might cause a substantial increase in hay prices of up to 15% (Schaub & Finge, 2020). In addition, droughts in Germany in 2018 led to a 16% reduction in cereal yields per hectare compared with the previous three-year average (PwC, 2020). Thus, climate change is highly relevant to the future performance of the entire food and beverage industry.

Although most productive sectors are negatively affected by climate change, global warming, drought, rising sea level and polar ice melting all have a significant influence on agricultural production, which, in turn, disrupts the supply chain of global agricultural goods (Hornsey & Fielding, 2019). Environmental challenges also affect the biodiversity of coastal tourist areas and eventually the entire global tourism industry (Steiger et al., 2019). In addition, the negative consequences of climate change have detrimental effects on reserve forests, swamp ecosystems, coral reefs and so on (Weiskopf et al., 2020). Given these reasons, the fisheries, timber and tourism-related industries are extremely affected. To curb the environmental challenges or accept the lowest effect of climate change, experts, along with international counterparts, have proposed numerous sustainable goals. From the farm-level perspective, the effects of climate change and climate-related measures are conceptualised and practiced by the consensus of the notion of ESG.

According to ESG consensus, SDG goals, environmental agreements and UN resolutions, firm-level practices of sustainability are essential to halting the effects of climate change. Such practices include accountability on climate-related issues, fund allocation for climate change, efforts in green transformation and maintaining transparent financial reporting (Manes-Rossi et al., 2018; Sani et al., 2020). Moreover, companies' ESG reporting plays a significant role in disclosing their efforts in mitigating climate change risk. However, to maintain strong corporate governance and transparency, managers and auditors have important responsibilities to strengthen the companies' efforts on ESG reporting.

### **3.0 EFFECT OF CLIMATE CHANGE RISK ON FINANCIAL REPORTING**

In 2020, Larry Fink, the CEO of BlackRock, Inc. (the world's largest investment management corporation), wrote his 2020 letter to CEOs that climate change risk is investment risk. Climate change risk is expected to accelerate a significant reallocation of capital that will profoundly affect the pricing of risk and assets globally (Fink, 2020). Investors consider climate change risk as investment risk because climate change may affect businesses in almost all industries, disregarding the sizes and nature of business entities (IAASB, 2020b). Climate change risk, physical and transitional, can affect firms' long-term value (BlackRock, 2020). Furthermore, firms' climate change events or conditions may affect their business models, operations and processes, and their ability to increase their finance and attract investments and new customers (IAASB, 2020b). Given the investors' need for this climate change information, companies' management should prepare robust information on climate change.

The objective of general-purpose financial reporting is 'to provide financial information about the reporting entity that is useful to exist and potential investors, lenders and other creditors in making decisions relating to providing resources to the entity'. Following ISA 200's 'Overall Objectives of the Independent Auditor and the Conduct of an Audit following International Standards on Auditing', managers' responsibility is to prepare financial statements according to the applicable financial reporting framework. Financial reporting frameworks often discuss the concept of materiality in the context of the preparation and presentation of financial statements and users' decision making (Roychowdhury et al., 2019). Information is material 'if omitting, misstating or obscuring it could reasonably be expected to influence decisions that the primary users of general-purpose financial statements make on the basis of those financial statements, which provide financial information about a specific reporting entity'. As such, materiality is an entity-specific aspect of relevance. Suppose information, such as climate change, can affect users' decision making. This information should be deemed as material and warrant disclosure in financial statements, regardless of their numerical influence.

Under the international financial reporting framework, reporting climate-related risk is seldom ever required (IAASB, 2020b). However, in most G20 jurisdictions, companies with public debt or equity have a legal obligation to disclose climate change risks as material information in their financial filings as climate-related issues can be material for many companies (TCFD, 2017) rather than only as a matter of corporate social responsibility or sustainability reporting (IAASB, 2020b). For example, over 1,500 organisations globally, including over 1,340 companies with a combined market capitalisation of US\$12.6 trillion and

financial institutions with a combined US\$150 trillion assets under management, have endorsed the use of the Financial Stability Board's (FSB) Task Force on Climate-related Financial Disclosures (TCFD) (TCFD, 2020). Given the importance of climate change risks to investors' economic decision making, support for climate change financial reporting has been increasing.

The International Financial Reporting Standards (IFRS) do not explicitly refer to the phrase 'climate change' (Anderson, 2020). However, companies can apply IFRS Practice Statement 2, 'Making Materiality Judgements', when preparing general-purpose financial statements following the IFRS if the effect of climate-change-related matter is material in the context of financial statements taken as a whole (IAASB, 2020a). Qualitative external factors, such as firms' industry and investor expectations, may make climate change risk material and warrant disclosures when managers prepare financial statements (AASB/AUASB, 2019). This recommendation does not negate to consider disclosing climate change and other emerging risks in other parts of the annual report, such as in management discussion and analysis or in separate corporate social responsibility or sustainability reports (AASB/AUASB, 2019). Disclosures made in financial statements will be audited, whereas those made in other documents may not be subject to audit (Anderson, 2020). As such, disclosure made in other documents cannot compensate for disclosures that should be made in financial statements.

Industries and private corporations are reluctant to disclose environmental budget allocation and expenditure in financial reporting. According to IASB (2020) and Anderson (2020), potential financial reporting implications arise from climate change and other emerging risks (i.e. impairment of assets including goodwill, changes in the estimated useful life of assets, changes in provisions and contingent liabilities arising from fines and penalties, changes in value in use calculation due to increased costs or reduced demand, changes in the fair value of assets, changes in the provision for onerous contracts due to increased costs or reduced demand and changes in expected credit losses for loans and other financial assets).

The non-exhaustive list of IFRS that may require companies to consider the effect of climate-related risk to be recognised and measured in financial statements and disclosures is summarised in Table 1.

Table 1: List of IFRS impacted by climate-related risk

IFRS	Effect on financial reporting arising from climate-related risks
IAS 1 – Presentation of Financial Statements	<p>Sources of estimation uncertainties and significant judgements</p> <p>IAS 1 requires a company to disclose certain information about the assumptions used if those assumptions about the future have a significant risk of resulting in a material adjustment to the carrying amounts of assets and liabilities. For example, climate-related matters may create certain uncertainties that affect assumptions used to develop estimates of future cash flows for impairment testing. Companies must disclose those uncertainties in a manner that helps investors understand the judgement management makes about the future. The disclosure may include the nature of the assumptions or the sensitivity of carrying amounts to the methods, assumptions and estimates underlying the calculation, as well as the reasons for the sensitivity.</p> <p>IAS 1 requires disclosures of the judgements the management makes that have the most significant effect on the amounts recognised in financial statements. For example, a company that operates in an industry that is significantly affected by climate-related matters has performed an impairment testing but recognised no impairment loss. Among others, a company needs to disclose management judgement in identifying the asset's cash-generating unit if such judgement has a significant effect on the amounts recognised in financial statements.</p> <p><b>Going concerned</b></p> <p>IAS 1 requires management to assess a company's ability to continue as a going concern when preparing its financial statements to ensure that the going concern basis of preparation is appropriate. In making such an assessment, the management considers all available information about the future to ensure that a company can operate at least in the next 12 months from the end of the reporting period. In the event that climate-related matters cause material uncertainties related to events or conditions that cast significant doubt on a company's ability to continue as a going concern, disclosure is required on those uncertainties. The disclosure of the effectiveness and the feasibility of any management plan to mitigate uncertainties related to the going concern assumptions is also required.</p>
IAS 2 – Inventories	<p>Regulation issued by a government on climate-related matters may cause the cost of production of inventories of a company to increase due to, for example, the payment of carbon tax or the reduction of selling prices because of the changes in customers' preference to a greener product. IAS</p>



IFRS	Effect on financial reporting arising from climate-related risks
	2 requires the cost of inventory to be written down if the net realisable value is lower than the production cost. Estimates of net realisable value are based on the most reliable evidence available at the time of the assessment, considering the timing of inventories to be realised.
IAS 16 – Property, Plant and Equipment	Climate-related matters may affect the useful life of and the residual value of an asset due to legal restrictions, obsolescence or inaccessibility of such assets. IAS 16 requires companies to review the estimated residual values of an asset and its residual value at least annually and reflect such changes if it occurs. Companies should also disclose the expected useful lives for each class of asset and the nature and amount of any change in estimated residual values or expected useful lives.
IAS 36 – Impairment of Assets	<p>IAS 36 requires a company to assess whether there exists any indication of impairment of goodwill and impairment of long-lived assets, such as property, plant and equipment or right-of-use assets. IAS 36 also requires goodwill to be assessed for its recoverable amount when impairment indicators exist or at least annually. Exposure to climate-related matters may indicate that an asset or a group of assets is impaired. For example, the imposition of a carbon tax on the companies or a decline in demand for the products because the customers want greener products are indicators of impairment.</p> <p>In estimating recoverable amounts using a value in use, IAS 36 requires a company to include the estimated future cash flows, including possible variations in the amount or timing of those future cash flows. This requires companies to reflect climate-related matters in their estimated future cash flows, such as additional capital expenditure to reduce greenhouse gas (GHG) emissions for existing assets.</p>
IAS 37 Provisions, Contingent Liabilities and Contingent Assets, IFRIC 21	Climate-related matters, such as levies imposed by the government for failure to meet certain climate-related targets or regulatory requirements to remediate environmental damage, may affect the recognition and measurement of liabilities and related disclosures.
IFRS 9 – Financial Instruments	A lender may be exposed to credit losses arising from climate-related matters. Regulatory changes may adversely affect the operations of a company exposed to climate-related matters. In this case, the lender may need to reflect climate-related risk in calculating the expected credit losses from the borrower.
IFRS 13 – Fair Value Measurement	The climate-related matter may affect the fair value measurement of assets and liabilities. For example, an anticipated climate-related regulation, such as carbon tax, may affect the fair value of an asset or liability. Specifically,

IFRS	Effect on financial reporting arising from climate-related risks
	fair value measurement categorised as Level 3 will use unobservable inputs significant to their measurement. IFRS 13 requires unobservable inputs used by market participants to include climate-related risk assumptions when pricing.

*Source: IAASB (2020a) and Anderson (2020)*

#### **4.0 AUDITORS' RESPONSIBILITIES TOWARDS CLIMATE CHANGE RISK**

Under ISA 200, the auditor must obtain reasonable assurance about whether financial statements are free from material misstatement, such that they can express whether the financial statements are prepared in all material respects and in accordance with an applicable financial reporting framework (IAASB, 2008). Given that climate change may affect firms, auditors must consider how climate risks affect the financial statements during the entire auditing process. In addition, climate-related risks may affect the auditors' responsibilities under professional standards and applicable laws and regulations. Table 2 highlights the auditor's consideration of climate-related risks in some of the more significant and most relevant areas. (For more detail on other ISAs affected by climate-related risk, please refer to IAASB (2020b).)

Table 2: List of ISA Standards affected by climate-related risk

ISA Standards	Effect on Auditing Financial Statements
<p>ISA 315 (Revised) – Identifying and Assessing the Risks of Material Misstatement through Understanding the Entity and Its Environment</p>	<p>In identifying and assessing the risk of material misstatement, during audit planning, the auditor should consider the implication of climate-related risks to the entity he or she audits. The climate-related risks may affect the entity in many areas, including:</p> <ul style="list-style-type: none"> <li>• The entity’s business model. Climate-related risks may influence the entity’s business model, including the entity’s supply chain. In addition, an entity may transform its current business model into a new business model. Ørsted (2020) transformed its business model from 85% of energy mix from fossil fuel and 15% from renewable in 2008 into 10% from fossil fuel and 90% from renewable in 2020. Furthermore, the auditor may need to understand how management and those charged with governance assess the effects of climate-related risks to the entity.</li> <li>• Industry factors. Although the effects of climate-related risks are entity-specific, industry factors such as technological developments, competitive environment and supplier and customer relationships will play an important role. For example, new technological developments to address climate change may significantly affect the industry as a whole and, in turn, affect the entity.</li> <li>• Regulatory factors. Regulatory factors include laws and regulations, political environment and any changes. Many governments, including Indonesia, have committed to meeting the goals of COP21. Recently, Indonesia’s government has issued a carbon tax regulation for companies exceeding the GHG cap. This regulation may require the auditor to audit the provision for a carbon tax if the GHG emission of the entity being audited exceeds the cap. A discussion to determine whether the cap has been exceeded is also required between auditors and management.</li> <li>• Other external factors. Other external factors may include general economic conditions, financing availability, interest rate and commodity price. For example, a coal company may have difficulty refinancing its loans because many financial institutions have announced that they will not provide any financing to carbon-based companies. For example, DBS Bank has announced that it will phase out thermal coal exposure by 2039 and stop taking on new customers from thermal coal clients with immediate effect (Ng, 2021).</li> </ul>

ISA Standards	Effect on Auditing Financial Statements
	<p>For a better understanding of the entity's internal control system, the auditor must understand the entity's risk assessment process relevant to the preparation of financial statements. Climate change is one of the factors to be considered by management as a climate-related business risk pertinent to its financial reporting. Auditors may also need to understand how managers assess the significance of such risks, including the likelihood of their occurrence and how management addresses such risks.</p> <p>During the risk assessment procedures performed, auditors must identify and assess the risks of material misstatement at the financial statement level and the assertion level for classes of transactions, account balances and disclosures. Climate-related risks may give rise to material misstatements in certain assertions, such as accuracy or valuation, including certain account balance and presentation and disclosure.</p>
ISA 330 – The Auditor's Responses to Assessed Risks	ISA 330 requires auditors, after performing identifying and assessing the risk of misstatements of material, to design and perform audit procedures as the responses to the assessed risks. If the climate change risk gives rise to the risk of material misstatement at the assertion level, the auditor must perform certain audit procedures in response to the risks. The higher the climate-related risk assessment is, the more persuasive audit evidence should be obtained by the auditor.
ISA 250 (Revised) – Consideration of Laws and Regulations in an Audit of Financial Statements	The auditor must consider any laws and regulations that directly affect financial statements, such as tax laws and regulations or labour laws. Climate-related regulations may have direct or indirect effects on financial statements. For example, a carbon tax imposed on an entity directly affects financial statements and thus needs to be audited by the auditor if the amount is material. In addition, some climate-related regulations may not have a direct effect on the amounts and disclosures in financial statements, but compliance with the regulations is fundamental to the operations of the entity, such that the entity can continue as a going concern or avoid material penalties from noncompliance. As such, a breach in the laws or regulations may directly affect financial statements.
ISA 540 (Revised) – Auditing Accounting Estimates and Related Disclosures	<p>In certain companies such as oil, gas and coal companies, climate-related risks may affect their accounting estimates such as:</p> <ul style="list-style-type: none"> <li>● Impairment of property, plant and equipment</li> <li>● Mineral resources and reserves</li> <li>● Certain provisions and contingent liabilities</li> <li>● Expected credit losses</li> </ul>

ISA Standards	Effect on Auditing Financial Statements
	<p>The auditor may consider several considerations in auditing accounting estimates relating to climate-related risks as follows:</p> <p><b>Risk Assessment Procedures and Related Activities</b></p> <ul style="list-style-type: none"> <li>Regulatory factors as the government may change climate-related laws and regulations that can affect the entity's cash flows and the recoverable amount of the entity's assets.</li> <li>Whether management has reassessed whether the methods, assumptions and data used remain appropriate or a new method, assumptions or data need to change to reflect the climate-related risks in their valuation model.</li> </ul> <p><b>Identifying and Assessing the Risks of Material Misstatement</b></p> <ul style="list-style-type: none"> <li>The degree of estimation uncertainty affects the accounting estimate because of climate-related risks. Climate-related risks may make precise and reliable predictions difficult to obtain and affect future events or conditions (e.g., extreme droughts impacting harvests). Furthermore, governments may discourage or restrict the use of fossil fuel energy and encourage the use of renewable energy and require entities to reduce their GHG emissions; therefore, the business environment in certain industries can be dramatically changed.</li> <li>The degree of complexity may be affected by climate-related risks. The use of specialised skills or knowledge is required to develop a new model to capture the effects of climate change. Furthermore, the need to incorporate data from outside the traditional accounting system because of climate change is another challenge for management to make an accounting estimate reflecting climate change.</li> <li>The degree of subjectivity may be affected by climate-related risks. This may be particularly for the case for assumptions with long forecast periods or assumptions based on data that are currently unobservable.</li> </ul>

ISA Standards	Effect on Auditing Financial Statements
	<p><b>Responding to the Assessed Risks of Material Misstatement</b></p> <p>In response to the assessed risks of material misstatement from significant accounting estimates, auditors may perform certain audit procedures to test how management makes the accounting estimate or develops an auditor's point estimate. The auditor performs such procedures to address:</p> <ul style="list-style-type: none"> <li>• Whether the data are appropriate, relevant, and reliable in the context of the applicable financial reporting framework, climate-related data may not be subject to the same internal control processes as accounting data. Therefore, the auditor may need to consider the relevancy and reliability of those data.</li> <li>• Whether the significant assumptions are appropriate in the circumstances, climate-related risks may affect assumptions such as the estimated useful lives of assets or estimated future cash flows (e.g., additional capital expenditure for addressing government regulation).</li> </ul>
ISA 620 – Using the Work of an Auditor's Expert	Auditors may determine that the engagement team requires specialised skills or knowledge to appropriately identify and assess material misstatement risks or respond to assessed risks when auditing entities are affected by climate-related risks. Suppose that an expert in a field other than accounting or auditing is necessary to obtain sufficient and appropriate audit evidence. In that case, the use of an auditor's expertise may be required.
ISA 570 (Revised) – Going Concerned	<p>Auditor has responsibility for assessing the entity's ability to continue as a going concern. ISA 570 guides whether events or conditions have been identified to cast significant doubt on the entity's ability to continue as a going concern. There exist certain instances when a climate-related risk may give rise to an event or condition that may cast significant doubt on the entity's ability to continue as a going concern:</p> <ul style="list-style-type: none"> <li>• The effects of extreme weather events that may be relevant to the appropriateness of management's going concern assumptions.</li> <li>• The risk of significant litigation claims may affect the entity's ability to continue its operations for the foreseeable future.</li> </ul>
ISA 701 – Communicating Key Audit Matters in the Independent Auditor's Report	The auditor should determine key audit matters to be communicated in his or her report. The degree to which climate-related risks may require auditor's attention in performing the audit and is thus a key audit matter.

Source: IAASB (2020b)

## **5.0 SUSTAINABILITY INFORMATION REPORTING FRAMEWORK**

IFAC (2021) and IFAC (2022) performed a benchmarking study to understand the current market practice for the assurance of ESG information globally for the years 2020 and 2019, respectively. Specifically, 1,400 companies from 22 jurisdictions were reviewed based on the largest market capitalisation as of March 2021 and attributed to jurisdictions based on the company's headquarters. One-hundred companies were examined for each of the six largest jurisdictions based on GDP (i.e., the US, Germany, the UK, China, India and Japan). Another 50 companies were examined for each of the 16 additional jurisdictions. A slight increase was observed from 91% in 2019 to 92% in 2020 in the overall scores of sustainability information report. In addition, 58% of companies in 2020 have some level of assurance on their ESG or sustainability reports, a 7% increase from 51% in 2019. Furthermore, for the 2020 sustainability or ESG reports, audit or audit-affiliated organisations performed 61% of assurance engagements on the respective ESG or sustainability reports, a slightly decrease from 63% for 2019 reports. In addition, for 2020 reports, 94% of assurance engagement performed by audit or audit-affiliated firms apply International Standard on Assurance Engagements 3000 (Revised), a 6% increase from 88% in 2019. Finally, 82% of assurance engagements (which apply ISAE 3000) result in limited assurance reports, a slight decrease from 83% in 2019 (IFAC, 2021, 2022). The ESG information reporting and assurance practice by countries are shown in Table 3.

Table 3 demonstrates that for 2019 reports, 100% of companies in France, South Africa, Hong Kong and Australia provide ESG or sustainability information as part of their corporate reporting. Similarly, 90%–99% of companies in other countries (i.e., Canada, Russia, South Korea, the USA, the UK, Brazil, Spain, India, Germany, Italy, Singapore and Indonesia) provide ESG or sustainability information as part of their corporate reporting (. At the same time, some countries (i.e., Turkey, Mexico, China, Argentina and Saudi Arabia) lag in providing ESG information as part of their corporate reporting, which is below 80%. However, Argentina and Saudi Arabia's companies stand at the bottom level among the countries, and only half of their companies provide ESG information as part of their corporate reporting.

Table 3 also provides the statistics of market practice whether ESG or sustainability information of the companies of the 22 countries being assured by independent parties. The fourth column in Table 3 shows that for 2019 reports, 93.5% of South Korean companies and 96% of French companies have their ESG or sustainability information being assured to add credibility on the information provided. However, the rest of the countries' companies are having a smaller number of ESG information being assured by independent parties. Companies

in Saudi Arabia, Singapore and Indonesia stand the bottom line to have ESG information being assured by independent parties. The different rules and regulations in different jurisdictions may be the cause of the difference level of the reports being assured.

The fifth column in Table 3 shows that audit and audit-related firms of the countries are engaged to perform assurance engagement on ESG information. For 2019 reports, in Argentina, Saudi Arabia and Australia, all ESG and sustainability reports were assured by audit or audit-related firms. Companies from the USA, South Korea and Hong Kong have lowest percentage to engage audit firms to provide assurance on their ESG information, specifically 5.3%, 11.1% and 23.1%, respectively. The different rules and regulations in different jurisdictions may be the cause of the difference that can provide independent check over sustainability or ESG reporting.

As a rapidly growing ASEAN country, companies in Indonesia are trying to follow the trend of providing important non-financial information, such as ESG information, into their corporate reporting. The requirement to provide sustainability reports in Indonesia is only for listed companies, financial institutions and non-bank financial institutions under OJK regulation. Nevertheless, 90% of companies in Indonesia provide their stakeholders with reports. The lack of the requirement for the reports to be assured has resulted in a low level of assurance for company reports in Indonesia. Furthermore, most of the assurance of the reports are conducted by other service providers rather than an audit firm. For example, the sustainability report of Gojek was assured by an audit firm using ISAE 3000 Standard (Gojek, 2021), whereas the sustainability report of Pertamina was assured by other service providers using other assurance standards (Pertamina, 2021). Thus, along with other countries, the effort of Indonesia also lies on the right track on sustainable reporting issues.



Table 3: Global practice of ESG in reporting and assurance by companies

No	Jurisdiction	% of ESG Reporting Companies	% Rate of ESG Assurance	% Assurance Provided by Audit or Audit-related Firms
1	Canada	94.0	44.7	75.0
2	Turkey	72.0	33.3	61.5
3	Russia	92.0	32.6	93.3
4	China (Mainland)	79.0	27.8	59.1
5	South Korea	92.0	93.5	5.3
6	Mexico	78.0	48.7	73.7
7	the US	99.0	71.0	11.1
8	Argentina	52.0	30.8	100.0
9	Brazil	90.0	53.3	76.0
10	France	100.0	96.0	98.1
11	Spain	96.0	79.0	93.2
12	South Africa	100.0	54.0	66.7
13	India	98.0	37.8	63.2
14	Saudi Arabia	52.0	7.7	100.0
15	the UK	99.0	54.5	53.5
16	Germany	94.0	63.0	93.8
17	Italy	98.0	73.5	97.3
18	Japan	99.0	47.5	62.8
19	Hong Kong	100.0	26.0	23.1
20	Australia	100.0	56.0	100.0
21	Singapore	96.0	20.8	53.8
22	Indonesia	90.0	20.0	33.3

*Source: IFAC (2021)*

Table 4 provides information about the ESG reporting framework/standard used by the companies of the considered 22 countries. Columns of the table provide the percentage of the practice of different ESG disclosure frameworks/standards by the companies (i.e., Global Reporting Initiative Standard (GRI), Sustainability Accounting Standards Board (SASB), SDG, TCFD, UN Communication Group (UNCG) and other standards). The sum of the percentage exceeds 100% because most companies have used more than one framework/standard for their sustainability or ESG reporting to satisfy their stakeholders' request.

Table 4: Global ESG reporting practice using different frameworks

No	Jurisdiction	GRI %	SASB %	SDG %	TCFD%	UNGC %	Others %
1	Argentina	100	15	69	8	12	27
2	Australia	70	4	62	54	4	40
3	Brazil	93	13	82	18	4	7
4	Canada	72	62	55	60	15	34
5	China	54	1	32	5	3	76
6	France	60	12	66	42	12	22
7	Germany	82	9	60	27	24	24
8	Hong Kong	62	0	56	8	10	86
9	India	47	3	39	4	13	29
10	Indonesia	67	11	69	0	4	80
11	Italy	98	16	71	29	4	10
12	Japan	62	9	86	36	10	42
13	Mexico	87	18	67	18	15	5
14	Russia	78	17	76	22	15	28
15	Saudi Arabia	54	8	42	0	4	8
16	Singapore	96	8	73	13	13	46
17	South Africa	64	2	62	12	34	80
18	South Korea	93	30	91	24	24	30
19	Spain	94	15	83	38	6	10
20	Turkey	64	17	47	6	8	17
21	UK	37	14	62	43	8	29
22	the US	59	48	48	31	10	11

*Source: IFAC (2021)*

As shown in Table 4, the GRI framework/standard is one of the popular ESG disclosure methods due to its global use and trustiness, and it used by the OECD, the UN Global Compact, UNEP and ISO. The GRI can also help companies avoid pitfalls and produce the most relevant ESG data with investors. The method is highly flexible with the emerging ESG topics and metrics. Finally, the GRI framework engages investors, vendors, employees, customers and national and international communities to assess the ESG issues that help meet the requirements of different stakeholders. Accordingly, most companies follow the GRI standard. From the table, 80%–100% of companies in Argentina, Brazil, Germany, Italy, Mexico, Singapore and South Korea use the GRI standard. Other countries are also highly reliant on the framework.

## 6.0 CONCLUSION

The study provides an in-depth discussion on the influence of climate change risk and financial reporting. Management has responsibilities to include climate change risk in their financial reporting because climate change risk is a material information for decision making. Auditors who audit the companies' financial statements may need to respond to the climate change risk to ensure that they have issued an appropriate audit opinion. Furthermore, climate change risk and other non-financial information, such as social and governance aspects, have increased their importance in influencing investment decisions (Amiram et al., 2018; Sani et al., 2020; Weiskopf et al., 2020). Companies focusing on sustainability have more value compared with others who do not. The frameworks or standards used for ESG reporting are various, with the GRI being the mostly used. The majority of sustainability or ESG reporting use more than one framework or standard.

The importance of ESG reporting triggers investors and regulators to call for greater comparability and consistency of ESG-related information (IOSCO, 2020). Past studies have argued that a globally accepted reporting standard for climate change and other significant matters and assurance engagement standards are required to provide high-quality climate change reporting for investors' use (Gold et al., 2020). As a result, on November 3, 2021, the IFRS Foundation Trustees announced the establishment of the International Sustainability Standards Board to deliver a comprehensive global baseline of sustainability-related disclosure standards to meet investors' information needs. However, whether there exists a need for the harmonisation of ESG-related or sustainability information has received mixed views.

Investors have heightened the call for greater simplicity, consistency and harmonisation of sustainability reporting standards, guidelines or frameworks (Allison-Hope, 2016; BSR, 2018). They do not specifically call for a single set of standards but prompt the elimination of overlaps, confusion and redundancies among existing standards, guidelines and frameworks (Adam & Abhayawansa, 2022). Despite BSR's (2018) belief that multiple reporting frameworks may appear confusing and conflicting, they do not believe that a single unified standard is a desirable or practical solution. This notion is similar to the International Business Counsel within the World Economic Forum, which intends to define common metrics for sustainable value creation rather than a single unified standard. The notion of having IFRS Foundation hosting a global Sustainability Standard Boards may stem from a genuine lack of knowledge about the robustness of the governance of GRI and a belief that only the IFRS Foundation can muster appropriate mechanism (through national accounting standard board or

IOSCO) to make such standard mandatory (Adam & Abhayawansa, 2022). As such, the landscape of ESG could change in the near future to be more in line with investors' expectation.

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