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Development of Climate-Related Disclosure Indicators for Application in Indonesia: A Delphi Method Study

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Abstract: Indonesia is currently preparing to adopt the climate-related disclosure standard. Before this new standard is implemented effectively, the Institute of Indonesia Chartered Accountants (IAI), the Indonesia Task Force on Comprehensive Corporate Reporting (CCR) leader, recognised the importance of harmonising this standard's key disclosure indicators with Indonesian regulations and business characteristics. In this case, input from various constituencies may be required, particularly regarding the mechanism that enables entities with varying capabilities and levels of preparation to apply this new standard. Hence, the main objective of this paper is to develop weighted and applicable climate-related disclosure indicators. We use the Delphi method to achieve this objective by involving several experts representing various user groups that influence accounting standard formulation in Indonesia. The Delphi method is a decision-making tool that establishes an effective communication process, facilitating complex problem solving. This study finalised 44 climate-related disclosure indicators based on the results of two Delphi rounds. Overall, 48% (21/44) of climate-related disclosure indicators were identified to be highly applicable. Among these high-relevance indicators, there were 10% (2/21) Governance, 24% (5/21) Strategy, 42% (9/21) Risk Management, and 24% (5/21) Metrics and Targets indicators. Additionally, around 20% (9/44) of climate-related disclosure indicators received 100% approval from the experts. Along with various essential implications, we argue that these results provide useful additional information for the national standard setter for the climate-related disclosure standard that are efficient and less burdensome to entities.

Keywords: climate-related disclosure; applicable indicators; Delphi method; the national standard setting process; Indonesia

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1. Introduction

Since the 2009 financial crisis, investors' needs and demands are no longer limited to financial information [1]. They are increasingly aware of the potential financial risks and opportunities due to environmental factors such as climate change [2]. It has prompted them to seek more information on corporate performance in environmental, social, and governance (ESG) aspects to better understand the risks and opportunities of companies and how they are managed [3–6]. Consequently, investors press companies to disclose

double materiality in their reports: (1) the risks of climate change on the company's activities and their economic sectors, and (2) the opportunities created by companies focused on climate change adaptation and mitigation [7].

Up to this point, the most prominent guidelines employed by companies around the globe for disclosing climate-related information are provided by five organisations: the Carbon Disclosure Project (CDP), Climate Disclosure Standards Board (CDSB), Global Reporting Initiative (GRI), Sustainability Accounting Standards Board (SASB), and International Integrated Reporting Council (IIRC). Although they have provided a valuable set of publicly available resources to guide climate-related risk and opportunity assessment and disclosure, they do not provide a complete coverage of physical climate hazards or refer to a comprehensive set of metrics for measuring physical climate risks [7]. In addition, the different guidelines provided by each organisation make the existing disclosures highly fragmented; the preparers use language, terms of reference, structure, and content according to the objectives and readers of each company's reports. As a result, the existing disclosures are often incomplete, inconsistent, and incommensurable [8], which creates confusion among users and causes a crisis of confidence in the information produced [9].

Investor interest in the climate-related information unsupported by appropriate disclosure systematics has encouraged the International Sustainability Standards Board (ISSB) formed by the International Financial Reporting Standards (IFRS) Foundation to publish the Exposure Draft IFRS S2 Climate-related Disclosures (*Climate Exposure Draft* hereafter) in March 2022 [10]. The *Climate Exposure Draft* was developed to provide more consistent, complete, comparable, and verifiable information on climate-related risks and opportunities, including consistent metrics and comparable standard qualitative disclosures for global markets. The *Climate Exposure Draft* enabled investors to assess an entity's exposure and manage climate-related risks and opportunities across markets, facilitating capital allocation and stewardship decisions.

The ISSB is currently re-deliberating the summary of comments received from various stakeholders, such as academics, auditors, investors, policy makers, corporations, public interest organisations, regulators, and standard setters. After the re-deliberation process is completed, the final version of the *Climate Exposure Draft* will be published at the end of the second quarter of 2023 [11] as a climate-related disclosure standard, which will be globally applicable beginning in January 2024. Benefits of implementing this standard include (1) providing relevant information and better communication to investors; (2) supporting investor decision making; (3) facilitating international comparability to attract more capital with an anticipated lower cost of capital; (4) avoiding double reporting; and (5) reducing the risk of confusion for those who used the information (i.e., less fragmented). Eventually, it would be extremely expensive for a jurisdiction not to implement the fundamental disclosure indicators provided in the *Climate Exposure Draft*.

Over 160 jurisdictions worldwide have used the IFRS Accounting Standards [12], and the final version of the *Climate Exposure Draft* will likely be applied in these jurisdictions. It is especially relevant to jurisdictions that have prepared the infrastructure for adoption. Indonesia is one of these jurisdictions. The standard setter for financial reporting in Indonesia, the Indonesian Chartered Accountants (IAI), has organised a Task Force on Comprehensive Corporate Reporting (Indonesia Task Force on CCR) consisting of representatives of key stakeholders, including regulators, relevant ministries, professional accountancy organisations, and preparers. The Indonesia Task Force on CCR has the following responsibilities: (1) reviewing and submitting responses to documents issued by the IFRS Foundation (especially ISSB) related to sustainability issues; (2) holding hearings with regulators regarding the development of sustainability issues; (3) actively being involved in various events at the international and national levels related to the development of sustainability issues both as speakers and participants; and (4) increasing public awareness regarding the development of sustainability disclosures through webinars and article publications [13].

IAI led the Indonesia Task Force on CCR to harmonise the key disclosure indicators in the *Climate Exposure Draft* with Indonesia's prevailing regulations and business characteris-

tics. This is common in an IFRS standard adoption process, given that many jurisdictions, including Indonesia, have cultural, legal, or political obstacles to an immediate full adoption of IFRS standards [14]. This harmonisation aims to introduce a mechanism allowing entities with varied capabilities and preparedness to apply this new standard, reducing the potential burden on entities in Indonesia. Some pragmatic matters may have to be resolved during this process, such as the overlap and repetition between indicators and ways to avoid the need for so many indicators that will make the disclosure standard heavy. Therefore, some indicators may be removed, while some alternatives are normally available. There are two possible reasons why disclosure indicators must be removed: (1) that they are not relevant information for business characteristics in Indonesia; (2) if the information is relevant, providing the necessary information is too expensive and challenging in Indonesia. At this point, the idea is that instead of having general and overall indicators, focusing on those that are more particular and weighted is certainly more prioritised. Constituent perceptions, in this case, can be valuable input for the Indonesia Task Force on CCR, especially before implementing the *Climate Exposure Draft* in Indonesia.

The main objective of this study was to develop climate-related disclosure indicators provided in the *Climate Exposure Draft* for further implementation in Indonesia. Our role through this study was in the appropriate channel of focus, considering that researchers can participate in the accounting regulation process by indirectly transferring their knowledge to standard setters through their research [15] or articulating their views on proposals issued by standard setters to parties other than standard setters [16], such as scientific journals. Moreover, as Barth [17] and Cooper and Robson [18] suggested, there is a permanent need for more researchers' participation in the standard setting process by delivering their insights and arguments. Improving researchers' participation is believed to support the notion of increased accounting standard legitimacy [19]. It may be because they are not affected by the standard but are experts on the topic. Hence, their opinions are less biased and tend to be conceptual and based on their research knowledge [20]. In addition, Gray [21] also calls for normative research in environmental accounting and the process of making accounting a useful tool for disclosing this type of company information [22]. At the same time, the participation of an accounting researcher's community in recent consulting on environmental accounting issues is still limited [23].

To achieve the main objective of this study, we employed a rigorous qualitative and quantitative methodology—the Delphi method. We argue that this method can be a rigorous scientific method for analysing ex-ante constituents' perceptions and consensus levels on new regulations, including the climate-related disclosure standard. In addition, the Delphi method in such circumstances has some main advantages that surveys do not have as a source of complementary information for due process, which can be summarised as follows: (1) the number of responses obtained by the monitor does not affect the results because it is not required to represent any target population, (2) the Delphi method allows for less biased conclusions because it can consider the opinions of all parties, whether directly or indirectly interested or affected, (3) the monitor knows the respondent and their expertise on the topic under study to maximise interaction with the respondent to clarify any aspect during the process, and (4) the data obtained can be richer because the principle of anonymity is maintained during the process, thereby offering a more rigorous (quantitative and qualitative) analysis than the standard setter analysis of comment letters.

Our study provides an important contribution to the accounting literature, where most current studies on climate-related disclosure are ex-post analyses, which use a descriptive content analysis to review the existing implementation of such disclosure. For example, Santos and Rodrigues [24] evaluated how banks in Portugal report climate-related information. Lombardi et al. [25] investigated the quality and quantity of climate-related information disclosed by 34 listed companies in Italy's industrial sector. Leicht and Leicht [26] examined the development of climate-related disclosure in non-financial reports of listed companies in Germany. Suta et al. [27] examined how new sustainability reporting requirements proposed by the *Climate Exposure Draft* could affect the current reporting con-

ditions of publicly listed European automotive manufacturers. Moreno and Caminero [28] analysed Task Force on Climate-Related Financial Disclosures (TCFD) recommendations on climate-related disclosure from 12 Spanish financial institutions, whose results showed that the number of reported disclosures was increasing yearly. In short, the current study is the first to use the Delphi method to develop climate-related disclosure indicators.

Hence, this novel study bridges the gap in the literature, where most studies on climate-related disclosure were ex-post—usually based on a content analysis to evaluate the implementation of existing disclosures. Although interpretations of these studies can be used ex-ante, they are not in a position to address the problems and provide solutions to regulatory decisions faced by standard setters. In addition, the standard setters may face some difficulties in understanding the implications of such studies. Therefore, the results of the current study are expected to supply the needs of the national standard setter for efficient knowledge transfer. In this case, the weight, applicability score, and consensus level of climate-related disclosure indicators found in this study can provide additional information for the national standard setter to finalise climate-related disclosures in Indonesia.

2. Materials and Methods

Delphi is a decision-making method initially developed by Norman Dalkey and Olaf Helmer in the 1960s to forecast how technology might affect conflict [29]. This method establishes an effective communication process, allowing individuals to solve complex problems [30,31]. Delphi is ideally suited to establishing a value opinion or estimating when models are impractical or impossible due to a lack of relevant technical, economic, or historical data or if a set of personal judgements needs to be established [32].

The Delphi method has been used for various purposes [33]. Novakowski and Wellar [34] classify most of these purposes into three categories: regulatory Delphi, forecasting Delphi, and political Delphi. The first Delphi is used to gain consensus about the preferred future. The second Delphi is used to make future predictions. Lastly, the third Delphi explores an interest with political consequences. The climate-related disclosure standard is part of accounting regulations; thus, this study is included in the first Delphi group. This technique was also used by Etxeberria et al. [35], Coy and Dixon [36], and Álvarez et al. [15], who simulated a standard setting process by using the Delphi method.

The Delphi method can be relied upon as an additional tool for ex-ante studies related to an accounting standard setting process. Although the position of Delphi does not replace any part of an accounting standard setting process, either IFRS standards or national standards, this method can complement it [15]. Much evidence has accumulated to show the Delphi method's utility, internal coherence, and external validity, particularly when properly planned and implemented [37]. Delphi can be a rigorous scientific method for analysing ex-ante constituents' perceptions of new regulations in such conditions. Hence, we must strictly design this method.

To strictly design the Delphi method, we adopted the steps and process of a regulatory Delphi proposed by Novakowski and Wellar [34]. Theoretically, the Delphi process can be continuously iterated until consensus is determined to have been reached [38]. Nonetheless, it is crucial to find a balance between time, money, and potential expert burnout [39–41]. Since two Delphi rounds have proven to be appropriate, we only conducted two [42–46]. Overall, this study took around 4.5 months to complete. The steps of the Delphi process are described and explained in a step-by-step fashion as follows.

2.1. Expert Selection

In this study, we carefully selected experts from those who have appropriate knowledge and are familiar with the objectives of this work (see [41,47,48]). The experts we selected are from Indonesia, representing the eight user groups that affect the formulation of accounting standards. Referring to Kieso et al. [49], these users consist of investors (primary users), regulators, preparers, academics, professional associations, financial com-

munities, accounting firms, and business entities (see Appendix A for details). At this point, we followed the literature suggestion to call on experts from various backgrounds with diverse interests so that all points of view can be captured (see [47]). Moreover, undoubtedly, they are users of our findings. As Linstone and Turoff [50] noted, inviting experts who are potential users of the findings is highly recommended. Most likely, they are willing to join the panel and deliver valuable and valid contributions.

The panel should contain experts or at least informed advocates [51]. Therefore, we should consider some expert qualification criteria. Related to this issue, Delphi method-based empirical studies have provided some recommendations. Working experience (in years) and education level are two standard criteria for selecting an expert. Hence, we selected experts with 5 years of work experience or more in financial and sustainability accounting fields with a minimum educational qualification of a Bachelor's (e.g., [44,52,53]).

Initially, 42 selected experts were invited, but only 21 agreed to participate in this study. Of the 21 experts who approved, only 16 people who responded in the first round showed a response rate of 76%. This is in line with the preceding discussion on the average number of experts utilised in a Delphi study (e.g., [31,34,54–59]). The profiles of these experts (four from a business entity, one from an accounting firm, one from an academic institution, one investor, one from a financial community, two preparers, five regulators, and one from a professional association) are presented in Table 1.

Table 1. Profiles of Experts Involved in the Delphi Rounds.

No.	Expert Code	Background	Affiliation	Experience (Number of Years)	Academic Qualification	Gender
01	BE-01	Business Entity	Public Company	More than 5	Master	Male
02	BE-02	Business Entity	Public Company	5	Master	Male
03	BE-03	Business Entity	Regionally Owned Enterprise	5	Master	Male
04	BE-04	Business Entity	State-Owned Enterprise	5	Bachelor	Male
05	AF-01	Accounting Firm	Public Accounting Firm	More than 10	Master	Male
06	ACD-01	Academics	University	More than 10	PhD	Male
07	IP-01	Investor	Investment Partner	More than 10	Master	Male
08	FC-01	Financial Community	Advisory Company	5	Master	Male
09	PRE-01	Preparer	Public Company	5	Master	Male
10	PRE-02	Preparer	Private Company	5	Master	Male
11	REG-01	Regulator	OJK	More than 10	Master	Female
12	REG-02	Regulator	DPR RI	5	Master	Female
13	REG-03	Regulator	BAPPENAS	More than 10	Master	Male
14	REG-04	Regulator	BKF	More than 5	Master	Male
15	REG-05	Regulator	BKF	More than 5	Bachelor	Male
16	PA-01	Professional Association	IAI	More than 10	Master	Male

2.2. Questionnaire Preparation

To design this study questionnaire, we used climate-related disclosure indicators provided in the *Climate Exposure Draft*. This document is based on the climate-related disclosure prototype developed by the IFRS Foundation's Technical Readiness Working Group (TRWG) in December 2021 [60]. This document also includes the recommendations by the Financial Stability Board's Task Force on Climate-Related Disclosures [61,62] and components of the framework and standards of international sustainability bodies, i.e., the CDP, the CDSB, the GRI, the IIRC, and the SASB, as set out in a prototype climate-related disclosure standard in December 2020 [63]. In addition, as in TCFD [61], climate-related disclosure in the *Climate Exposure Draft* also provides information that allows users of general-purpose financial reporting to understand four main aspects: Governance, Strategy, Risk Management, and Metrics and Targets. Each aspect is accompanied by indicators that need to be disclosed. There are 42 climate-related disclosure indicators (8 Governance, 15 Strategy, 9 Risk Management, and 10 Metrics and Targets). See Table 2 for a detailed description of the indicators.

Table 2. Climate-related Disclosure Indicators.

Aspects: Indicators	Description
Governance:	
Governance-01	The identity of the unit or individual within the unit that is responsible for overseeing climate-related risks and opportunities
Governance-02	A description of how unit responsibilities related to climate-related risks and opportunities are reflected in the entity's terms of reference, the mandate of the board of directors, and other policies
Governance-03	A description of how the unit ensures that appropriate skills and competencies are in place to oversee strategies designed to respond to climate-related risks and opportunities
Governance-04	A description of how and how often the unit and its committees (audit, risk, or other committees) are notified of climate-related risks and opportunities
Governance-05	A description of how the unit and its committees consider climate-related risks and opportunities when they oversee the entity's strategy, major transaction decisions, and risk management policies
Governance-06	A description of how the unit and its committees oversee the setting of targets related to significant climate-related risks and opportunities and monitor progress toward these targets
Governance-07	Description of management's role in assessing and managing climate-related risks and opportunities
Governance-08	How the unique controls and procedures are applied to the management of climate-related risks and opportunities
Strategy:	
Strategy-01	A description of significant climate-related risks and opportunities and the period when these risks and opportunities affect the entity in terms of business models, strategies, and cash flows; access to finance; and cost of capital, either in the short, medium, or long term
Strategy-02	A description of how the entity defines the short, medium, and long term and how these definitions relate to the dimensions of the entity's strategic planning and capital allocation plans
Strategy-03	A description of whether the identified risk is a physical risk or a transitional risk (an acute physical risk could include an increasing severity of extreme weather events such as hurricanes and floods; chronic physical risks include a sea level rise or average temperature rise; transition risks could include regulatory, technological, market, legal, or reputational risks)
Strategy-04	A description of the impacts (current and future) of significant climate-related risks and opportunities on the entity's value chain
Strategy-05	A description of where significant climate-related risks and opportunities are concentrated within the entity's value chain (e.g., geographic area, facility or asset type, input, output, or distribution channel)
Strategy-06	Information about how the entity responds to significant climate-related risks and opportunities, including (1) how the entity plans to achieve the specified climate-related targets, (2) how the current and future changes in the entity's business model occur, and (3) how the entity plans to be financed
Strategy-07	Information on how the entity plans climate-related targets, which include (1) the review process, (2) the number of emission reduction targets to be achieved, and (3) the purpose of using carbon offsets (actions to eliminate CO_2 emissions produced in one place with emission reduction actions elsewhere) in achieving emission targets
Strategy-08	Quantitative and qualitative information on the progress of plans disclosed in the previous reporting period
Strategy-09	Information on how significantly climate-related risks and opportunities have affected the most recently reported financial position, financial performance, and cash flows
Strategy-10	Information about identified climate-related risks and opportunities where there is a significant risk that there will be a material adjustment to the carrying amounts of assets and liabilities reported in subsequent financial statements
Strategy-11	Information about how the entity expects its financial position to change over time, given its strategy to address significant climate-related risks and opportunities, which reflects (1) the entity's current investment plans and commitments and their impact on the entity's financial position and (2) sources of funding that the entity plans to implement its strategy

Table 2. *Cont.*

Aspects: Indicators	Description
Strategy-12	Information on how the entity's financial performance is expected to change over time, based on the implementation of strategies to address significant climate-related risks and opportunities (for example: (1) an increase in revenue or product costs and improvement of services in line with a low-carbon economy in accordance with international agreement updates on climate change, (2) physical damage to assets from climate events, and (3) costs of climate adaptation or mitigation)
Strategy-13	An explanation of why the entity would not be able to disclose quantitative information for Strategy-09 to Strategy-12 (above) if that were the case
Strategy-14	Information on the results of a climate resilience analysis relating to (1) the implications of implementing the strategy, (2) the areas of uncertainty analysed, and (3) the entity's ability to adapt its climate resilience strategy to climate change in the short, medium, and long term
Strategy-15	How the analysis is carried out relates to when climate-related analysis scenarios are used or not used
Risk Management:	
Risk Management-01	A description of the process by which an entity identifies climate-related risks and opportunities
Risk Management-02	Information about how the entity assesses the effects related to risk (e.g., qualitative factors, quantitative thresholds, and criteria used)
Risk Management-03	Information about how the entity prioritizes one risk over another
Risk Management-04	The input parameters used by the entity (e.g., data source, scope of operations, detailed assumptions used)
Risk Management-05	Information about whether the processes that the entity has changed are compared to processes in the previous reporting period
Risk Management-06	A description of the processes the entity uses to identify, assess, and prioritize climate-related opportunities
Risk Management-07	A description of the processes the entity uses to monitor and manage climate-related risks and opportunities, including related policies
Risk Management-08	A description of the extent and how the identification, assessment, and management of climate-related risks are integrated into the entity's overall risk management process
Risk Management-09	A description of the extent and how the process of identifying climate-related opportunities, the assessment, and the management process are integrated into the overall management process in the entity
Metrics and Targets:	
Metrics and Targets-01	Greenhouse gas emissions (absolute gross greenhouse gas emissions generated during the reporting period, measured following the Greenhouse Gas Protocol Corporate Standard, and expressed in metric tons of a CO_2 equivalent)
Metrics and Targets-02	Transition risk, namely the number and percentage of assets or business activities that are susceptible to transition risk
Metrics and Targets-03	Physical risk, namely the number and percentage of assets or business activities that are susceptible to physical risk
Metrics and Targets-04	Climate-related opportunities, namely the number and percentage of assets or business activities that are in line with climate-related opportunities
Metrics and Targets-05	Capital deployment, namely the amount of capital expenditure, financing, or investment used for climate-related risks and opportunities
Metrics and Targets-06	An internal carbon price, which is the price for each metric ton of greenhouse gas emissions that the entity uses to assess the cost of the entity's greenhouse gas emissions
Metrics and Targets-07	Remuneration, namely the percentage of executive management remuneration recognized in the current period based on climate-related considerations
Metrics and Targets-08	Disclose information about industry-based metric measures relevant to the topic of disclosure, entities participating in an industry, and entities whose business models and underlying activities share the same features as the industry

Table 2. *Cont.*

Aspects: Indicators	Description
Metrics and Targets-09	Disclose information about other metric measures used by the entity's management to measure the achievement of established targets
Metrics and Targets-10	Disclose information about targets set by the entity to mitigate or adapt to climate-related risks or maximize climate-related opportunities

Source: [10].

2.3. Delphi First Round

In the first round, we sent a closed-ended questionnaire (modified Delphi) and an open-ended questionnaire (traditional Delphi), as suggested by Kerlinger [64] and Custer et al. [65]. The first questionnaire asked experts to assess the applicability of climate-related disclosure indicators. Therefore, we set a Likert scale from 1 to 4 to rate the applicability (1 for least applicable and 4 for most applicable). An even-point scale was used because we expected experts to make a definitive decision regarding the applicability of the questioned indicators rather than selecting a neutral option (see [66]). The second questionnaire allowed experts to provide comments and add appropriate indicators that were not on the list. The experts were given 2 weeks to return the questionnaires. However, it took almost a month after giving the experts three reminders. Eventually, we ended up with 76% responses (16 out of 21 experts).

We reviewed and summarised the results quantitatively after obtaining responses from the 16 experts. We used the mean and median as the preferred parameter/statistic to identify where the majority of the experts' positions were on the response continuum [34]. To indicate that experts consider the proposed indicators applicable, we took an acceptable threshold for the mean and median of the top two measures (3 and 4). This threshold was established because the inclination towards a negative response increased when using an even-point scale [66,67].

In addition, we also calculated the interquartile range (IQR) and the percentage of answers for the top two measures (3 and 4) as an additional statistical analysis. Since the applicability score was measured using 4-unit scales, the IQR should be no more than 1 [68,69]. Following Huang et al. [70], who successfully applied a Delphi exercise to develop an indicator, we specified that the percentage of answers from points 3 and 4 must be more than 70%. Below all these thresholds, climate-related disclosure indicators were excluded from a further analysis. Some indicators were removed, but some were added based on the experts' recommendations in this round. We revised the questionnaires according to these results and redistributed them to the experts in the second round.

2.4. Delphi Second Round

The second round was undertaken to obtain the experts' consensus (e.g., [71]). We asked the experts to express their agreement (Yes/No) on each indicator that had been determined based on the results of the first round. In addition, we asked experts to rate the applicability of climate-related disclosure indicators recommended in the first round using a Likert scale from 1 to 4. The applicability score was then analysed similarly to the first round. The questionnaires were distributed to the 16 experts; however, only 15 returned them after waiting for 3 weeks and giving three reminders, showing a response rate of 93.75%.

After receiving feedback from the 15 experts in the second round, we measured the experts' consensus on climate-related disclosure indicators. The consensus was based on an 80% or higher score (at least 12 out of 15 experts agreed with an indicator). It follows what [72,73] suggested: monitors should seek an 80% or better agreement when they have more than five experts in a panel. This agreement level will determine which climate-related disclosure indicators are included. Calculating the proportion in agreement to measure

consensus is indeed the most widely used approach [71,74]. However, some criticisms have been levelled at this approach, particularly concerning the possibility of values being inflated due to the risk of chance agreement. It is reasonable since a chance agreement is an issue of concern in evaluating consensus among experts, especially when the option is dichotomous [75], like Yes/No questions in this study. Moreover, Cohen [76] has criticised the use of simple proportion agreements as a "primitive" measure. Hence, the level of agreement that we set above needs to be adjusted for chance agreement.

To conduct such an analysis, we adopted the method developed by Polit et al. [77], which they called the modified kappa statistics (k^*). These statistics are called modified kappa because they only consider certain types of agreement, i.e., the expert agreement that the questioned indicator is relevant. Agreement on the irrelevance is ignored because it does not inform judgments about the validity of an indicator.

To obtain k^*, we needed to calculate the probability of chance agreement (Pc) using the binomial random variable formula as follows.

$$Pc = \left[\frac{n!}{r!(n-r)!}\right] 0.5^n \quad (1)$$

where n and r stand for the number of experts involved in the Delphi rounds and the number of experts answering "Yes" to an indicator, respectively; meanwhile, 0.5 is a given number representing the likelihood of a chance agreement. Hereafter, k^* is computed using the basic formula for kappa (see [75]) as follows.

$$k^* = \frac{Yes\ (\%) - Pc}{1 - Pc} \quad (2)$$

The nominator in Equation (2) represents the actual agreement observed beyond chance. The denominator indicates the maximum agreement beyond what was predicted by chance. We interpreted k^* using the criteria established by Fleiss [78] and Cicchetti and Sparrow [79]. Thus, k^* is considered "fair" if the value lies between 0.40 and 0.59, "good" if the values fall between 0.60 and 0.74, and "excellent" if the values are above 0.74. Following Molnar et al. [80], indicators with a kappa value below 0.74 or solely representing less than an "excellent" agreement would be eliminated.

3. Results

3.1. Delphi Results: The First Round

In the first round, 42 appropriate climate-related disclosure indicators (as shown in Table 2) were included in the data collection instrument, which was initially sent to the panel of experts. From the applicability standpoint, the responses in this round revealed that the median values of all indicators were in the range of 3 to 4, and all IQRs were lower or equal to 1. However, we found that three indicators have a mean value of less than 3 (2.75), and the proportion of answers 3 and 4 is less than 70% (0.625): (1) "the identity of the unit or individual within the unit that is responsible for overseeing climate-related risks and opportunities" (Governance-01); (2) "an explanation of why the entity would not be able to disclose quantitative information for Strategy-09 to Strategy-12 (above) if that were the case" (Strategy-13); and (3) "an internal carbon price, which is the price for each metric ton of greenhouse gas emissions that the entity uses to assess the cost of the entity's greenhouse gas emissions" (Metrics and Targets-06). Hence, we had to eliminate them. These results are reported in Table 3. Several experts representing business entities, a financial community, regulators, investors, and preparers contributed to eliminating these three indicators.

Table 3. The Mean, Median, IQR, and Answers 3 and 4 Proportion of Each Indicator.

Aspects: Indicators	Mean	Median	IQR	3 and 4 (%)
Governance:				
Governance-01	2.75 *	3	1	0.625 *
Governance-02	3.44	3.5	1	0.938
Governance-03	3.19	3	0.3	0.938
Governance-04	3	3	0	0.813
Governance-05	3.13	3	0.3	0.875
Governance-06	3.25	3	1	0.938
Governance-07	3.13	3	0.3	0.875
Governance-08	3.13	3	0.3	0.875
Strategy:				
Strategy-01	3.25	3	0.3	1
Strategy-02	3.13	3	0.3	0.875
Strategy-03	3.13	3	0.3	0.875
Strategy-04	3.13	3	0.3	0.875
Strategy-05	3.19	3	1	0.875
Strategy-06	3.25	3	1	0.938
Strategy-07	3.25	3	1	0.938
Strategy-08	3.19	3	1	0.875
Strategy-09	3.25	3	0.3	1
Strategy-10	3.31	3	1	1
Strategy-11	3.19	3	0.3	0.938
Strategy-12	3.13	3	0.3	0.875
Strategy-13	2.75 *	3	1	0.625 *
Strategy-14	3	3	0	0.813
Strategy-15	3.06	3	0	0.875
Risk Management:				
Risk Management-01	3.13	3	1	0.813
Risk Management-02	3.13	3	1	0.813
Risk Management-03	3.38	3	1	0.938
Risk Management-04	3.44	3.5	1	0.938
Risk Management-05	3.44	3.5	1	0.938
Risk Management-06	3.38	3	1	0.938
Risk Management-07	3.38	3	1	0.938
Risk Management-08	3.25	3	1	0.938
Risk Management-09	3.31	3	1	0.938
Metrics and Targets:				
Metrics and Targets-01	3.25	3	1	0.938
Metrics and Targets-02	3.19	3	1	0.875
Metrics and Targets-03	3.38	3.5	1	0.875
Metrics and Targets-04	3.31	3	1	0.938
Metrics and Targets-05	3.19	3	0.25	0.938
Metrics and Targets-06	2.75 *	3	1	0.625 *
Metrics and Targets-07	3	3	0	0.875
Metrics and Targets-08	3.38	3	1	0.938
Metrics and Targets-09	3.19	3	1	0.875
Metrics and Targets-10	3.5	4	1	0.938

Note: * = Below the threshold; thus, the indicator is eliminated. The number of experts = 16.

During the feedback process, the experts gave us reasons why they tended to choose the bottom two scales (1 or 2) for those indicators. For example, regarding Governance-01, experts argued that this indicator is too detailed, especially for the initial application in Indonesia. The disclosure should avoid complexity and focus on relevant information, such as the direct impact of climate-related risks and opportunities on business performance. In addition, the position of the monitors is not explicitly stated—whether they are in one unit, in different units but within the same entity, or monitored independently by a committee

assigned by a business association or chamber of commerce. If the same unit has the authority to carry out and supervise, there is a risk of an abuse of power.

In addition, Strategy-13 has a low mean applicability score since it is also considered overly detailed and tends to be redundant, as it only repeats the previous indicators within the same aspect. Lastly, experts gave lower scores for Metrics and Targets-06 because companies in Indonesia have not implemented a carbon price policy. Therefore, the experts may assume that the companies are unfamiliar with the concept of carbon prices that may be applied. Such information disclosure is expected to be challenging and prone to mistakes or inaccuracies.

Furthermore, some additional indicators were included based on the experts' comments and recommendations received in the open-ended questionnaire of this round. According to the results, some experts added one indicator for Governance and Strategy. Two additional indicators were recommended for the Governance aspect. Six indicators were added for Risk Management. The Metrics and Targets aspects had two additional indicators. In addition, one expert also recommends an additional disclosure aspect related to Environmental Ethics with one disclosure indicator: "analysis of how the relationship pattern between values exists in the neighbouring community affected by climate change". However, this indicator still implements one of the principles of good corporate governance, i.e., accountability, which can specifically relate to the environmental impact caused by company activities [81]. Consequently, we include this indicator in the Governance aspect, and thus this aspect has two additional indicators. Table 4 briefly describes these additional climate-related disclosure indicators. In summary, 3 indicators were removed, while 11 were added based on the first-round results.

Table 4. Additional Climate-related Disclosure Indicators.

Aspects: Indicators	Description
Governance:	
Governance-09	Information related to the guidelines for implementing corporate governance
Governance-10	Analysis of how the relationship pattern between values exists in the neighbouring community affected by climate change
Strategy:	
Strategy-16	Information related to the classification of actions, mitigation, and adaptation
Risk Management:	
Risk Management-10	Information on risk management instruments that are suitable for all types of business processes so that they can be grouped by type of risk (e.g., low, medium, and high risks)
Risk Management-11	Information on how management responds to the level of risk that has been identified
Risk Management-12	Information on risk management mitigation measures
Risk Management-13	Information about the management unit of the company's risk management implementation
Risk Management-14	Information on efforts to improve risk management
Risk Management-15	Information related to solutions that must be conducted when a risk occurs
Metrics and Targets:	
Metrics and Targets-11	Information related to the types of equipment that produce greenhouse gas emissions and how they are used to reduce greenhouse gas production
Metrics and Targets-12	Information related to future costs to the recovery of environmental pollution due to produced greenhouse gas emissions

3.2. Delphi Results: The Second Round

In the second round, 50 climate-related disclosure indicators were included in the questionnaire, consisting of 9 Governance, 15 Strategy, 15 Risk Management, and 11 Metrics

and Targets. This set of indicators consists of 11 additional indicators drawn from experts' recommendations in the previous round. Thus, experts were asked to provide applicability scores for these new indicators in this round. Afterwards, we analysed them quantitatively as the original indicators (see Table 5).

Table 5. The Mean, Median, IQR, and Answers 3 and 4 Proportion of Each Additional Indicator.

Aspects: Indicators	Mean	Median	IQR	3 and 4 (%)
Governance:				
Governance-09	3.07	3	1.5 *	0.733
Governance-10	2.53 *	3	1	0.533 *
Strategy:				
Strategy-16	3	3	0.5	0.8
Risk Management:				
Risk Management-10	3.2	3	1	0.867
Risk Management-11	3.2	3	1	0.867
Risk Management-12	3.33	3	1	0.933
Risk Management-13	3.2	3	1	0.8
Risk Management-14	3.27	3	1	0.933
Risk Management-15	3	3	0.5	0.867
Metrics and Targets:				
Metrics and Targets-11	2.67 *	3	1	0.563 *
Metrics and Targets-12	2.87 *	3	1	0.733

Note: * = Below the threshold; thus, the indicator is eliminated. The number of experts = 15.

According to Table 5, we found that three indicators had a mean applicability score below 3: (1) "analysis of how the relationship pattern between values exists in the neighbouring community affected by climate change" (Governance-10); (2) "information related to the types of equipment that produce greenhouse gas emissions and how they are used to reduce greenhouse gas production" (Metrics and Targets-11); and (3) "information related to future costs to the recovery of environmental pollution due to produced greenhouse gas emissions" (Metrics and Targets-12). Meanwhile, an indicator was found to have an IQR above 1—"information related to the guidelines for implementing corporate governance" (Governance-09). These indicators had to be eliminated, while the rest were temporarily retained until consensus measurement.

Table 6 presents the level of experts' consensus on the appropriate indicators that should be reported in a climate-related disclosure. Indicators with a level of consensus < 80% and/or having k^* values < 0.76 (less than "excellent" agreement) were eliminated from the list. The result shows that "information on how management responds to the level of risk that has been identified" (Risk Management-11) and "information about the management unit of the company's risk management implementation" (Risk Management-13) were removed because their consensus level and k^* values were only 0.733 and 0.727, respectively. Consequently, there were 44 remaining indicators for climate-related disclosure: 7 Governance, 15 Strategy, 13 Risk Management, and 9 Metrics and Targets.

3.3. Analysis of the Final Results

A range of useful analyses could be made based on the results presented in the previous section. For clarity purposes, the analysis was carried out separately at the indicator and aspect levels and with respect to experts' consensus. To sharpen the analysis, we calculated the weight of the indicators and aspects using the mean applicability scores in this section. The weight of a climate-related disclosure indicator is the ratio of its mean applicability score to the sum of mean applicability scores of all climate-related disclosure indicators in that aspect. Meanwhile, the weight of a climate-related disclosure aspect is the ratio of the sum of mean applicability scores of all climate-related disclosure

indicators in that aspect to the sum of mean applicability scores of all climate-related disclosure indicators.

Table 6. Consensus Level on Climate-related Disclosure Indicators.

Aspects: Indicators	Consensus Number (Yes)	Yes (%)	Pc	k^*	Interpretation of k^*
Governance:					
Governance-02	13	0.867	0.003	0.86	Excellent
Governance-03	12	0.8	0.014	0.772	Excellent
Governance-04	12	0.8	0.014	0.772	Excellent
Governance-05	14	0.933	0.0005	0.932	Excellent
Governance-06	13	0.867	0.003	0.86	Excellent
Governance-07	14	0.933	0.003	0.932	Excellent
Governance-08	14	0.933	0.0005	0.932	Excellent
Strategy:					
Strategy-01	15	1	0	1	Excellent
Strategy-02	14	0.933	0.0005	0.932	Excellent
Strategy-03	15	1	0	1	Excellent
Strategy-04	15	1	0	1	Excellent
Strategy-05	15	1	0	1	Excellent
Strategy-06	13	0.867	0.003	0.86	Excellent
Strategy-07	13	0.867	0.003	0.86	Excellent
Strategy-08	14	0.933	0.0005	0.932	Excellent
Strategy-09	13	0.867	0.003	0.86	Excellent
Strategy-10	12	0.8	0.0134	0.772	Excellent
Strategy-11	14	0.933	0.0005	0.932	Excellent
Strategy-12	14	0.933	0.0005	0.932	Excellent
Strategy-14	13	0.867	0.003	0.86	Excellent
Strategy-15	15	1	0	1	Excellent
Strategy-16 [a]	14	0.933	0.0005	0.932	Excellent
Risk Management:					
Risk Management-01	14	0.933	0.0005	0.932	Excellent
Risk Management-02	15	1	0	1	Excellent
Risk Management-03	14	0.933	0.0005	0.932	Excellent
Risk Management-04	14	0.933	0.0005	0.932	Excellent
Risk Management-05	15	1	0	1	Excellent
Risk Management-06	13	0.867	0.003	0.86	Excellent
Risk Management-07	15	1	0	1	Excellent
Risk Management-08	13	0.867	0.003	0.86	Excellent
Risk Management-09	13	0.867	0.003	0.86	Excellent
Risk Management-10 [a]	13	0.867	0.003	0.86	Excellent
Risk Management-11 [a]	11	0.733 *	0.003	0.727 *	Good *
Risk Management-10 [a]	13	0.867	0.003	0.86	Excellent
Risk Management-13 [a]	11	0.733 *	0.003	0.727 *	Good *
Risk Management-14 [a]	14	0.933	0.0005	0.932	Excellent
Risk Management-15 [a]	14	0.933	0.0005	0.932	Excellent
Metrics and Targets:					
Metrics and Targets-01	13	0.867	0.003	0.86	Excellent
Metrics and Targets-02	14	0.933	0.0005	0.932	Excellent
Metrics and Targets-03	13	0.867	0.003	0.86	Excellent
Metrics and Targets-04	13	0.867	0.003	0.86	Excellent
Metrics and Targets-05	14	0.933	0.0005	0.932	Excellent
Metrics and Targets-07	14	0.933	0.0005	0.932	Excellent
Metrics and Targets-08	12	0.8	0.0134	0.772	Excellent
Metrics and Targets-09	15	1	0	1	Excellent
Metrics and Targets-10	14	0.933	0.0005	0.932	Excellent

Note: * = Below the threshold; thus, the indicator is eliminated. [a] = Additional indicators based on the experts' recommendations in the first round. The number of experts = 15.

3.3.1. Indicator Level

The applicability score of each indicator showed its relevance or priority indicators for climate-related disclosure. For instance, from the Governance aspect (see Table 7), "a description of how unit responsibilities related to climate-related risks and opportunities are reflected in the entity's terms of reference, the mandate of the board of directors, and other policies" (Governance-02) has the highest mean applicability score (3.44) compared to other indicators. Moreover, if a score of 3.25 or higher was viewed as highly applicable, there was 29% (2/7) of climate-related disclosure indicators in the Governance aspect.

Table 7. Local Priority of Governance Indicators Based on Applicability Score.

Order	Indicators	Applicability Score	Indicator's Weight	Aspect's Weight
01	Governance-02	3.44	0.154	
02	Governance-06	3.25	0.146	
03	Governance-03	3.19	0.143	
04	Governance-05	3.13	0.14	0.157
05	Governance-07	3.13	0.14	
06	Governance-08	3.13	0.14	
07	Governance-04	3	0.135	

Note: Applicability score $\geq$ 2.5 is highly applicable.

From the Strategy aspect viewpoint, "information about identified climate-related risks and opportunities where there is a significant risk that there will be a material adjustment to the carrying amounts of assets and liabilities reported in subsequent financial statements" (Strategy-10) with a score of 3.31 was the most applicable indicator. Strategy-01, Strategy-06, Strategy-07, and Strategy-09 were jointly below this disclosure indicator with a score of 3.25.

On the other hand, the additional indicator from the expert on "information related to the classification of actions, mitigation, and adaptation" (Strategy-16) has the lowest mean applicability score (3). In addition, "information on the results of a climate resilience analysis relating to (1) the implications of implementing the strategy, (2) the areas of uncertainty analysed, and (3) the entity's ability to adapt its climate resilience strategy to climate change in the short, medium, and long term" (Strategy-14) was also found to be a lowest ranked indicator. In summary, 33% (5/15) of climate-related disclosure indicators in the Strategy aspect were highly relevant, according to the discussed criterion. The local priority of Strategy indicators is given in Table 8.

Table 8. Local Priority of Strategy Indicators Based on Applicability Score.

Order	Indicators	Applicability Score	Indicator's Weight	Aspect's Weight
01	Strategy-10	3.31	0.07	
02	Strategy-01	3.25	0.069	
03	Strategy-06	3.25	0.069	
04	Strategy-07	3.25	0.069	
05	Strategy-09	3.25	0.069	
06	Strategy-05	3.19	0.067	
07	Strategy-08	3.19	0.067	
08	Strategy-11	3.19	0.067	0.335
09	Strategy-02	3.13	0.066	
10	Strategy-03	3.13	0.066	
11	Strategy-04	3.13	0.066	
12	Strategy-12	3.13	0.066	
13	Strategy-15	3.06	0.065	
14	Strategy-14	3	0.063	
15	Strategy-16 [a]	3	0.063	

Note: [a] = Additional indicators based on the experts' recommendations in the first round. An applicability score $\geq$ 2.5 is highly applicable.

From the Risk Management aspect, as presented in Table 9, "the input parameters used by the entity (e.g., data source, scope of operations, detailed assumptions used)" (Risk Management-4) has the highest mean applicability score. Furthermore, the additional indicator recommended by the expert on "information related to solutions that must be conducted when a risk occurs" (Risk Management-15), with a score of 3, has the lowest mean applicability score. Solutions to risks may be important, but disclosure of this information seems to be not essential and is typically intended solely for internal parties of the entity. A disclosure relating to assessing climate-related risk is likely more useful in this case, particularly at a practical level in Indonesia. The high applicability score (3.25) for such disclosure (see Risk Management-08) seems to justify this argument. Overall, there was 69% (9/13) of highly applicable climate-related disclosure indicators.

Table 9. Local Priority of Risk Management Indicators Based on Applicability Score.

Order	Indicators	Applicability Score	Indicator's Weight	Aspect's Weight
01	Risk Management-04	3.44	0.081	
02	Risk Management-05	3.44	0.081	
03	Risk Management-03	3.38	0.079	
04	Risk Management-06	3.38	0.079	
05	Risk Management-07	3.38	0.079	
06	Risk Management-12 [a]	3.33	0.078	
07	Risk Management-09	3.31	0.078	0.301
08	Risk Management-14 [a]	3.27	0.077	
09	Risk Management-08	3.25	0.076	
10	Risk Management-10 [a]	3.2	0.075	
11	Risk Management-01	3.13	0.073	
12	Risk Management-02	3.13	0.073	
13	Risk Management-15 [a]	3	0.07	

Note: [a] = Additional indicators based on the experts' recommendations in the first round. An applicability score $\geq$ 2.5 is highly applicable.

From the Metrics and Targets aspect (see Table 10), the three most applicable climate-related disclosure indicators were Metrics and Targets-10 (3.5), Metrics and Targets-03 (3.38), and Metrics and Targets-08 (3.38). The most applicable indicator (Metrics and Targets-10) was related to the "targets set by the entity to mitigate or adapt to climate-related risks or maximise climate-related opportunities." This could be because this indicator is compulsory and directly represents the main purpose of the corresponding aspect. This information is especially useful for the primary users to better assess a company's progress in managing or adapting to climate-related issues. It also provides a basis for them to compare targets in other companies still in the same business sector or industry. The lowest score (3) in this aspect is associated with Metrics and Targets-07: "remuneration, namely the percentage of executive management remuneration recognised in the current period based on climate-related considerations." Basically, 56% (5/9) of the indicators were highly relevant.

Table 10. Local Priority of Metrics and Targets Indicators Based on Applicability Score.

Order	Indicators	Applicability Score	Indicator's Weight	Aspect's Weight
01	Metrics and Targets-10	3.5	0.119	
02	Metrics and Targets-03	3.38	0.115	
03	Metrics and Targets-08	3.38	0.115	
04	Metrics and Targets-04	3.31	0.113	
05	Metrics and Targets-01	3.25	0.111	0.207
06	Metrics and Targets-02	3.19	0.109	
07	Metrics and Targets-05	3.19	0.109	
08	Metrics and Targets-09	3.19	0.109	
09	Metrics and Targets-07	3	0.102	

Note: An applicability score $\geq$ 2.5 is highly applicable.

Regardless of those aspects, globally, Metrics and Targets-10, Governance-02, Risk Management-04, and Risk Management-05 were the top four climate-related disclosure indicators. In contrast, the lowest mean applicability score among all indicators from all aspects was associated with Governance-04, Strategy-14, Strategy-16, Risk Management-15, and Metrics and Targets-07. The global priority of all indicators is depicted in Table 11. In summary, there was approximately 48% (21/44) of highly applicable climate-related disclosure indicators. Among these high-relevance indicators, there was 10% (2/21) of Governance, 24% (5/21) of Strategy, 42% (9/21) of Risk Management, and 24% (5/21) of Metrics and Targets indicators.

Table 11. Global Priority of Climate-related Disclosure Indicators Based on Applicability Score.

Order	Indicators	Applicability Score
01	Metrics and Targets-10	3.5
02	Governance-02	3.44
03	Risk Management-04	3.44
04	Risk Management-05	3.44
05	Risk Management-03	3.38
06	Risk Management-06	3.38
07	Risk Management-07	3.38
08	Metrics and Targets-03	3.38
09	Metrics and Targets-08	3.38
10	Risk Management-12 [a]	3.33
11	Strategy-10	3.31
12	Risk Management-09	3.31
13	Metrics and Targets-04	3.31
14	Risk Management-14 [a]	3.27
15	Governance-06	3.25
16	Strategy-01	3.25
17	Strategy-06	3.25
18	Strategy-07	3.25
19	Strategy-09	3.25
20	Risk Management-08	3.25
21	Metrics and Targets-01	3.25
22	Risk Management-10 [a]	3.2
23	Governance-03	3.19
24	Strategy-05	3.19
25	Strategy-08	3.19
26	Strategy-11	3.19
27	Metrics and Targets-02	3.19
28	Metrics and Targets-05	3.19
29	Metrics and Targets-09	3.19
30	Governance-05	3.13
31	Governance-07	3.13
32	Governance-08	3.13
33	Strategy-02	3.13
34	Strategy-03	3.13
35	Strategy-04	3.13
36	Strategy-12	3.13
37	Risk Management-01	3.13
38	Risk Management-02	3.13
39	Strategy-15	3.06
40	Governance-04	3
41	Strategy-14	3
42	Strategy-16 [a]	3
43	Risk Management-15 [a]	3
44	Metrics and Targets-07	3

Note: [a] = Additional indicators based on the experts' recommendations in the first round. An applicability score $\geq$ 2.5 is highly applicable.

3.3.2. Aspect Level

Our analysis could also be performed at the aspect level. In the manner of this kind of analysis, we present Figure 1, which summarises the weight of each aspect in an ordered manner. Generally, we found that the Strategy aspect has the highest weight (0.335). This proves that experts viewed it as more applicable than other aspects. This may be because this aspect is related to some entity missions, including the entity's programs and action plans regarding the entity's role in responding to climate change. The second applicable aspect is Risk Management (0.301). In addition, we found that the Governance aspect has the lowest weight (0.157) below Metrics and Targets (0.207).

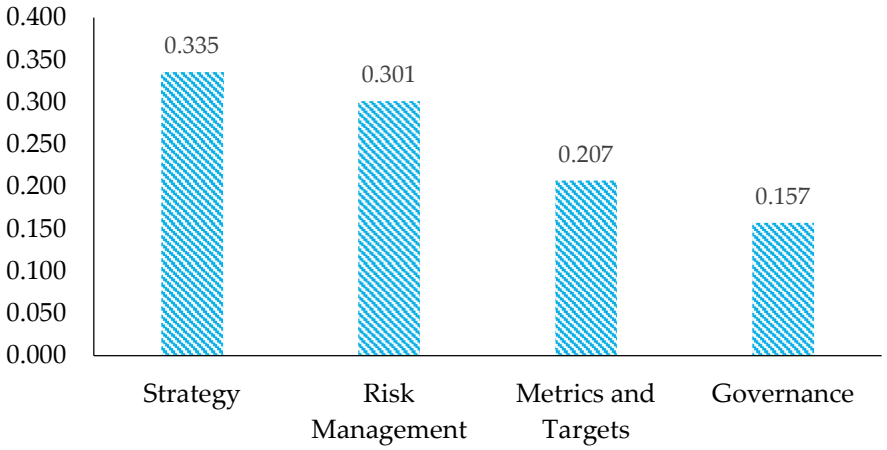

Figure 1. The weight of climate-related disclosure aspects.

3.3.3. Experts' Agreement

This section discusses the level of agreement or consensus experts gave to climate-related disclosure indicators. For example, a consensus score of 100% indicates that all experts agreed to include the indicators. In this case, as presented in Table 12, from the global viewpoint, we found that only 20% (9/44) of the entire indicators were agreed upon by all experts in the panel (100% consensus). Among these indicators, there was 44% (4/9) of Strategy, 33% (3/9) of Risk Management, and 23% (2/9) of Metrics and Targets indicators. According to these findings, no Governance indicators received 100% consensus, following our findings in Figure 1 that show that Governance has the lowest weight among the four disclosure aspects. In addition, based on the earlier screening criterion, the indicators with less than 80% consensus were already eliminated. Only 9% (4 out of 44) of indicators with 80% consensus comprised 2 Governance, 1 Strategy, and 1 Metrics and Targets.

Table 12. Global Consensus on Climate-related Disclosure Indicators.

Order	Indicators	Consensus Number (Yes)	Yes (%)
01	Strategy-01	15	1
02	Strategy-03	15	1
03	Strategy-04	15	1
04	Strategy-05	15	1
05	Strategy-15	15	1
06	Risk Management-02	15	1
07	Risk Management-05	15	1
08	Risk Management-07	15	1
09	Metrics and Targets-09	15	1
10	Governance-05	14	0.933
11	Governance-07	14	0.933
12	Governance-08	14	0.933
13	Strategy-02	14	0.933

Table 12. *Cont.*

Order	Indicators	Consensus Number (Yes)	Yes (%)
14	Strategy-08	14	0.933
15	Strategy-11	14	0.933
16	Strategy-12	14	0.933
17	Strategy-16 [a]	14	0.933
18	Risk Management-01	14	0.933
19	Risk Management-03	14	0.933
20	Risk Management-04	14	0.933
21	Risk Management-14 [a]	14	0.933
22	Risk Management-15 [a]	14	0.933
23	Metrics and Targets-02	14	0.933
24	Metrics and Targets-05	14	0.933
25	Metrics and Targets-07	14	0.933
26	Metrics and Targets-10	14	0.933
27	Governance-02	13	0.867
28	Governance-06	13	0.867
29	Strategy-06	13	0.867
30	Strategy-07	13	0.867
31	Strategy-09	13	0.867
32	Strategy-14	13	0.867
33	Risk Management-06	13	0.867
34	Risk Management-08	13	0.867
35	Risk Management-09	13	0.867
36	Risk Management-10 [a]	13	0.867
37	Risk Management-10 [a]	13	0.867
38	Metrics and Targets-01	13	0.867
39	Metrics and Targets-03	13	0.867
40	Metrics and Targets-04	13	0.867
41	Governance-03	12	0.8
42	Governance-04	12	0.8
43	Strategy-10	12	0.8
44	Metrics and Targets-08	12	0.8

Note: [a] = Additional indicators based on the experts' recommendations in the first round. The number of experts = 15.

4. Discussion

To the researchers' best knowledge, this study was the first to develop climate-related disclosure indicators for implementation in Indonesia using the regulatory Delphi method. Since no rules exist for determining expertise, this method requires a panel of experts [82]. In the current study, the expert panellists are key persons in several agencies involved in Indonesia's accounting regulation process (see Appendix A). All panellists have at least 5 years of work experience in financial and sustainability accounting, with a minimum educational qualification of a bachelor's degree. Their competence and diversity contributed to the enhancement of the consensus decision.

This study has provided an academic contribution by demonstrating the use of the Delphi method as a corroboration tool to set an accounting standard. It can guide accounting researchers in using this method for similar purposes to produce more useful and reliable results than other existing studies. For instance, previous studies on this topic have only used descriptive statistics to calculate expert consensus (e.g., [15,35,46]). This approach is the most widely used but can mislead researchers' conclusions about expert consensus due to the possible existence of a chance agreement. It is reasonable since a chance agreement is an issue of concern in evaluating consensus among experts, especially when the option is dichotomous (Yes/No). Therefore, we used the kappa statistic as an inferential statistic to adjust the degree of agreement with coincidence agreement (see Table 6).

According to the experts' consensus, 44 applicable indicators were explicitly identified, representing four disclosure aspects: Governance, Strategy, Risk Management, and Metrics and Targets, each of which had 7, 15, 13, and 9 indicators, respectively. The level of

consensus of all the finalised indicators was greater than 80% and the k^* values were larger than 0.76, demonstrating excellent consensus.

From the Governance aspect, the most applicable indicator is "a description of how unit responsibilities related to climate-related risks and opportunities are reflected in the entity's terms of reference, the mandate of the board of directors, and other policies" (Governance-02). This is reasonable since responsibility is the primary principle in corporate governance, especially for state-owned, public, and private companies [81]. Strengthening the role and responsibility of the unit, especially concerning climate-related risks and opportunities, can increase corporate accountability and the quality of disclosure on such topics. In addition, a unit's responsibility for a climate issue is also expected to improve performance and build trust among stakeholders. This could be why the experts gave the highest score for this indicator.

In addition, as IAI suggested in their comment letter, the Governance aspect should also contain information regarding the criteria that entities will use to assess the skills of the management or committee that are responsible for identifying climate-related risks and opportunities [83]. This criterion must be accepted from a global perspective or individual jurisdictions to achieve the same objectives. However, none of the experts that participated in our Delphi rounds ignored this issue.

In the Strategy aspect, "information related to the classification of actions, mitigation, and adaptation" (Strategy-16) received the lowest score from the experts. This may be because the experts viewed that this disclosure indicator is not a strategy part but more to a detailed action plan that matters in a company's program. Meanwhile, a company's action plan details will provide competitors with information they can use to their advantage. Hence, companies normally tend to protect this information to maintain their competitive advantage [84].

Risk Management-4, "the input parameters used by the entity (e.g., data source, scope of operations, detailed assumptions used)", has the highest score in the Risk Management aspect. This is reasonable since the points in this indicator reflect the risk management process, as detailed in the risk management guidelines published by the International Organization for Standardization in 2018 [85]. The second highest mean applicability score belonged to "information about whether the processes that the entity has changed are compared to processes in the previous reporting period" (Risk Management-5). After executing a mitigation strategy, some evaluations may need to be carried out to determine the next action plan to improve the company's previous plan in the reporting period to mitigate climate issues [86]. Hence, comparing this reporting period with the previous one is indispensable.

From the Metrics and Targets aspect, "remuneration, namely the percentage of executive management remuneration recognised in the current period based on climate-related considerations" has the lowest score. Determining the level of executive remuneration based on climate considerations is empirically supported. For instance, Callan and Thomas [87] and Kartadjumena and Rodgers [88] showed that top executives would be rewarded with higher compensation if they can motivate companies to engage more on climate and environmental issues. However, Arndt and Bigelow [89] found that management will be motivated to disclose additional information (discretionary), including executive remuneration, when the company's position is threatened by the withdrawal of resources by providers (investors). In other words, disclosure regarding this indicator is solely a legitimacy management tactic to improve the interpretation of controversial actions [90]. Under normal circumstances, companies have no intention of disclosing such information [91]. Perhaps this is why experts tend to give Metrics and Targets-07 a relatively low score compared to other indicators.

When viewed from the aspects of the disclosure, Strategy is the aspect that has the most weight among the others. This result is in line with what Deloitte [92] noted; the growing attention of investors to corporate sustainability is seen in the hope that a board of directors will have transparency regarding the company's strategy in dealing with

social, environmental, and climate issues and its disclosure to stakeholders. After Strategy, Risk Management appears as the second most weighted aspect. Climate change risk management can be considered an extension of existing risk management and become part of the management and decision-making process (see [93]).

Meanwhile, what is most astonishing from the findings is that Governance is found to be the least weighted aspect, given that a governance system is a basic guide for companies to supervise and guide managers in managing corporate resources [94]. It may lead a company to a condition conducive to running its operations [95]. However, as Connelly et al. [96] found, adopting so-called "good" corporate governance practices does not guarantee a firm performance. Hermiyetti and Manik [97] highlighted that good governance mechanisms, particularly in developing countries, only serve as a form of corporate compliance with government law and regulation (formality purposes). Thus, implementing good corporate governance becomes ineffective and not optimal in improving a company's financial performance (e.g., [98–102]). Meanwhile, increasing financial performance through some strategies becomes a requirement for a company to attract investors [103]. This may be why the Governance aspect has the lowest weight while the Strategy aspect has the highest weight.

The results of this study thus provide an important contribution at a practical level, especially in the case of a developing country like Indonesia, where most companies still use GRI to disclose annual information, imitating their counterparts in developed countries, but may not constantly adapt to changing needs and conditions within the local context [104]. Although the GRI is the most common global framework for disclosing climate-related information, some critical studies have indicated several possible weaknesses of the GRI. For example, Knebel and Seele [105] and Boiral [106] stated that GRI could not achieve some qualitative characteristics such as comparability, standardisation, and thus transparency of climate-related disclosure, which may be due to reporting flexibility and voluntary guidelines. Meanwhile, the *Climate Exposure Draft* studied in this paper upholds these qualitative characteristics (see [10]).

5. Conclusions

The growing demand for climate-related risks and opportunities from investors has led to the publication of the *Climate Exposure Draft* by ISSB. In Indonesia, the national standard setter/IAI is preparing to adopt this new standard as a national standard. In its application, IAI views that the harmonisation of the key indicators of the new standard needs to be carried out so that it is in accordance with the regulations and business characteristics that exist in Indonesia. To ensure harmonization with Indonesian regulations and business characteristics, the input of constituents may provide valuable additional information for the IAI to finalise the *Climate Exposure Draft* for implementation in the local jurisdiction. Our study aimed to contribute to this regulatory accounting process by developing weighted and applicable climate-related disclosure indicators using the Delphi method.

In this case, our paper demonstrates the potential contribution of the Delphi method to develop weighted and applicable indicators for an accounting report. This study can also guide researchers in using this method for such purposes to produce useful and reliable results. Despite the valuable outcomes, it is important to acknowledge certain limitations of our study. First, regarding the use of the Delphi method itself, several studies noted some limitations of Delphi when used by standard setters and other institutions to obtain additional input and information from constituencies (e.g., [31,107,108]). Critics of Delphi cited potential issues such as manipulation by monitors, challenges in determining correctness, and the possibility of improper application due to insufficient knowledge. The three identified limitations impact the decision-making process for selecting experts, developing the questionnaire, and interpreting the findings. Hence, we encourage further studies to use other multi-criteria decision-making techniques, such as the Analytic Hierarchy Process (AHP) or Analytic Network Process (ANP). Second, we only had one academic during Delphi rounds, and their opinions are typically less biased since they do not have a special

interest in the results but are experts on the topic. Therefore, we strongly encourage further research to invite more academics.

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Appendix A

The following are parties representing eight user groups that influence the formulation of accounting standards in Indonesia:

1. Investors: In line with our decision-usefulness objective, we define investors as the primary user of climate-related disclosures. They use this information as a basis for determining resource allocation.
2. Regulators: In our research, we selected parties currently involved in sustainability disclosure projects in Indonesia. For example, the Financial Services Authority/*Otoritas Jasa Keungan* (OJK) is currently developing a climate-related financial risk framework to mitigate climate-related financial risks. The Ministry of National Development Planning/*Badan Perencanaan Pembangunan Nasional* (BAPPENAS) contributes to preparing programs to achieve the Sustainable Development Goals (SDGs) in Indonesia. The Fiscal Policy Agency/*Badan Kebijakan Fiskal* (BKF) has the authority to set policies on climate change and multilateral financing. Lastly, The House of Representatives of the Republic of Indonesia/*Dewan Perwakilan Rakyat Republik Indonesia* (DPR RI) was selected because there is a State Financial Accountability Agency.
3. Preparers: We consider a company's top management as the preparers since they have a significant role in preparing general-purpose financial reports and have full authority to assess the report. They also use this report to track the company's internal developments and as a basis for its business decisions.
4. Academics: Given the importance of technical knowledge, we selected academics who are experts in this subject area researching this topic. They have often been involved in national or international accounting regulation processes.
5. Professional association: The professional associations we selected in this study are directly involved in a sustainability-related disclosure process and focus on climate change mitigation in Indonesia. We chose the IAI because this organisation is forming

a Task Force on CCR to prepare for implementing the climate-related disclosure standard in Indonesia.

6. Financial community: We selected financial analysts to represent a financial community because they have the expertise to analyse corporate accounting, a financial analysis, and climate-related risks and opportunities.
7. Accounting firm: We chose a public accounting firm because we hoped they can provide an opinion on whether the proposed climate-related disclosure follows the applicable standards for general-purpose financial reporting.
8. Business entity: We selected several companies in the agriculture and energy sectors listed on the Indonesian stock exchange (IDX) to represent the business entities. They are the ones who are likely to be regulated to prepare climate-related disclosures according to their business characteristics. Therefore, their point of view is essential to determine which information is useful for their investors.

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