Climate Change-related Risk Disclosure: A study on Indian Insurance Sector

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Abstract

Purpose of the study: This paper aims to investigate the compliance of climate risk reporting practices according to the standards and requirements provided by SASB and CDSB, respectively, by the Indian general insurance sector, one of the most vulnerable sectors to this emerging risk.

Study design/ methodology/approach: 28 Indian general insurance companies have been selected for this study. With the help of content analysis, this paper has examined the annual reports of the sample companies to check the level of compliance in disclosing climate risk-related information with the standards and requirements provided by SASB and CDSB.

Findings: The study revealed that this sector is aware of the emerging risk of climate change and trying to disclose some climate risk-related data in their reporting practices. However, it has been found that the disclosed information is not up to the required standards.

Implications: This paper provides an overview of the extent to which the Indian Insurance sector discloses climate-related data, which is significant for the stakeholders and crucial for sustainable financial stability. Investors and other stakeholders do not yet fully understand the impacts of climate risk; hence further research is needed to understand the consequences of this emerging risk.

Keywords: *Climate Change, Climate Risk, Climate risk reporting, Insurance Sector, SASB, CDSB.*

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Introduction: In the era of sustainability, climate change has been recognized as one of the most impactful risks towards businesses (UNEP FI, 2015). United Nations Framework Convention on Climate Change (UNFCCC) defines climate change as "a change which attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable periods". Drastic changes in weather patterns, average rainfall, and world temperatures have been observed periodically. Catastrophic floods, rising sea levels, melting snow and glacier at the two poles, hurricanes are some adverse effects of climate change. Intergovernmental Panel on Climate Change (IPCC) report, "Climate change 2014: Impacts, Adaptions and Vulnerability" reveals that all the continents and oceans have already started experiencing the effects of climate change.

To make more informed decisions, the investors and other stakeholders must have decision-making information. They seek more informative and quality information related to climate risk. Hence, for sustainable growth, companies are required to incorporate climate risk-related disclosures in their mainstream processes and practices. In the recent era of sustainability, the mainstream disclosures of the corporate are insufficient to meet the needs of the stakeholders as it does not provide climate or environment-related decision-making information. Stakeholders across the world feel the need to know about the information relating to the consumption of resources and its negative impact on the environment and at the same time, they are also curious about the information relating to efforts of the enterprises to reduce the emerging risk due to the effect of this factor. Hence companies are reporting different aspects of climate risk in their mainstream report to enhance their acceptability in society. For the reporting of climate risk-related information, different reporting practices have been introduced like sustainability reporting, ESG reporting, business responsibility reporting, and integrated reporting. Though companies are reporting climate risk-related information, due to the lack of some standards/ guidelines in this regards the reporting information may not be useful for taking decisions timely. To meet this need 'Task Force on Climate-related Financial Disclosures (TCFD)has given several recommendations. The 'Sustainability Accounting Standards Board' (SASB)has provided some standards and the climate Disclosure Standards Board' (CDSB)has also provided some requirements in this regard.

The present study focuses on the insurance sector. The insurance sector plays a very significant role in achieving sustainable growth for business entities. Insurance is a contract between two entities to protect against uncertain financial losses with the exchange of money. "Climate change is identified as both threat as well as an opportunity to the insurance industry: a threat because losses limit the availability and affordability of coverage and an opportunity because risk can be priced into premiums and investments, thereby creating incentives to support mitigation and adaption strategies of climate risk throughout the global economy" (Thistlethwaite and Wood, 2018). On the other hand, by absorbing financial losses from extreme weather events, the insurance (reinsurance) sector plays a significant role in the adaption or mitigation of climate risks. It also provides a source of funds for recovery and reconstruction during the post-disaster economic period. A country with well-managed insurance markets could recover much faster and more efficiently when struck by a disaster. Climate change-related risks are broadly divided into two categories: i) Physical risks, and ii) Transition risks (Final Report: TCFD, 2017). Physical risks are related to the direct losses from extreme weather events such as severe floods, storms, and droughts, etc. On the other hand, for the mitigation and adaptation of climate change-related risks, our economies move forward to a greener and advanced economy. Transition risks are related to rapid investment in renewable and advanced projects which may pose a significant risk on the existing carbon-intensive projects and businesses. Both of these risks are relevant to the general insurance sector. Physical risks are directly related to the general insurance industry as these risks can damage the insured assets and properties, thereby increasing the number of claims. The transition risks are linked with the financial risks that arise from the transition to a greener economy. The government, society, and regulators are trying to limit the climate risk by developing new policies and new technologies. Policymakers are urgently required to transit our economy towards a low carbon economy to mitigate the climate-related issue. This kind of action could make the existing carbon intensives technologies useless. The re-valuation of carbon-sensitive assets due to transition towards a lower-carbon economy possesses potential risks for insurance firms.

The impact of climate change-related 'physical risks' on the general insurance companies:

- The increasing severity and frequency of droughts around the world will lead to an increase in losses from crop damage and water scarcity. This will possess potential risks to the general insurer by increasing the number of insurance claims for the damage of the weather-based crops.

- Increasing the severity and frequency of flooding causes damage to crops, assets, and property which leads to an increase in defaults in repayments of loan amounts to the financial intermediaries, disruption in the global supply chain, and instability in business activities and also increase the risk of the insurance companies.
- Severe windstorms may cause damage to crops, assets, and property and may also disrupt the global supply chain which leads to instability in the general insurance industry.

The impact of climate change-related 'transition risks' on the general insurance companies:

- Loss from the revaluation of the market value of the carbon-intensive assets and/or investment income may possess potential losses for the general insurance companies.
- Changes in the structure of commercial risk due to transition to new and different processes for decarbonized the economy.
- The risk from the regulatory authorities to withdraw insurance support from the projects and companies in the coal and carbon sensitive sector.
- Climate change is also identified reputational risk as the investors and other stakeholders are taking this emerging risk as a very serious issue. The insurance sector is facing the risk potential.
- Dramatic changes in the economic sectors and industries for transition to a greener economy leads to political risks towards the financial and non-financial sector.

Climate change may affect the operational and financial stability of the insurance sector. "The degree to which an insurance company is managing these risks ultimately needs to be incorporated into the analysis of rating agencies for the benefit of investors, policyholders, and other stakeholders" (Ceres, 2014). Disclosing climate change-related impact and actions taken to adapt or manage the risk by the sector is very much crucial as the insurance sector is the most exposed sector to climate risk. Quality information reporting practices by the insurance firm enable the investors, the suppliers, the policymakers, the researchers and the regulatory bodies to make better decisions. Information should be qualitatively and quantitatively efficient so that better decisions can be made. Insurance companies help companies to hedge against climate risk. Climate change-related disclosures should be decision-useful, efficient and they should meet the need of the stakeholders. Disclosure of climate-related information helps to understand the trend of climate change-related losses faced by the insurance sector. For adaption and mitigation of the risk, we first have to understand the risk effectively and to understand that climate-related disclosures help in understanding such risk. The disclosures also help to understand how climate change affects the insurance sector. So disclosures should follow a standard while disclosing climate change-related data in the reporting practices. Here it should be emphasized that if the climate information is not as per standards and not useful for decision making, the objective of disclose will be defeated. This paper examines, to what extend the Indian general insurance sector discloses quality information related to climate change, in conformity with the standards.

Literature Review: Climate change issue being an emerging and global phenomenon across the world, several authors have already conducted research works in the area of climate change accounting or disclosure. **Haque and Deegan (2010)** explored governance practices regarding climate change-related information disclosures by the Australian energy-intensive companies. They found an increasing trend in the reporting practices regarding climate change-related information disclosure by the sample companies, but their reporting practices were at a very low level. **Berthlot and Robert (2011)** examined the compliance of climate change disclosures in the annual reports with the guidelines prescribed by the 'Canadian Institute of Chartered Accountants (CICA) of the selected Canadian oil and gas firms. They found that the sample companies seem to follow the guidelines in their disclosures but in terms of scope and details the disclosures are not fulfilling the requirement of the investors and other stakeholders. They also realized that the investors and other stakeholders may need mandatory disclosure requirements related to climate change reporting to make more efficient decisions. **Yusoff and Darus (2014)** investigated the environmental disclosure practices by the Islamic Financial Institutions (IFIs) in Malaysia. They found that the IFIs have disclosed climate mitigation, adaptation, and pollution prevention-related information. They also conclude that the environmental-related disclosures were minimal, general and qualitative. Public awareness also influences the disclosure level, for instance, **Amran, Periasamy and Zulkafli (2014)** found that public awareness about climate change plays a significant role in creating pressure for disclosing climate change information by the corporates. This paper revealed that in developed countries, public awareness about climate change is higher compared to developing countries. They also found that where the public awareness about climate change is higher, the pressure for disclosing climate change-related information is also higher. In addition, the paper also revealed that companies that are operating in countries that are concerned about sustainable practice are more active in climate risk disclosure. **Ahmad and Hossain (2015)** found that in the case of Malaysia, though climate change-related disclosure is not mandatory, some Malaysian companies ate voluntarily disclosing some information regarding climate change. They also found that in Malaysia the disclosure related to climate change is at the introductory stage. Some authors explore the climate risk reporting practices, like **Masudetal. (2017)** investigated environmental reporting practices by the listed banking companies of Bangladesh in twelve major disclosing areas related to environmental issues. The study revealed that the sample banking companies have disclosed the most about the information relating to 'green banking' and 'renewable energy' categories, whereas they have disclosed the least information about the 'environmental recognition' and 'waste' categories. They also found an increasing trend in the environmental disclosure by the sample banks from 16% in 2010 to 83% in 2014. External factors may also affect the company's disclosure level related to climate change, for instance, **Mchavi et al. (2017)** explored the relationship between external pressure and climate change-related disclosure in the case of South African Banks. They considered five external pressure variables for their study i.e. 'social pressure', 'government pressure', 'regulatory pressure', 'customer pressure' and 'political pressure'. They found no significant relationship between external pressure and environmental disclosure. **Charumathi and Rahman (2017)** found that large Indian companies are taking efforts to incorporate the climate change-related risk in recent years with a regulatory reporting regime and the introduction of the Paris Climate Agreement. The authors also found that the Indian large companies are increasingly disclosing climate change-related information after implementing mandatory business responsibility reporting. **Nuskiya & Ekanayake (2019)** empirically investigated the trends in climate risk disclosure of the listed Sri Lankan Insurance companies. They revealed that the sample companies have disclosed in four themes i.e. "'Environmental Policy Statement', 'Partnership with national Initiatives', 'Partnership with International Initiatives', and 'Senior Executive Level'" related to climate risk governance. They also found an increasing trend in climate risk governance of the publically listed companies in Sri Lanka. **Tzouvanas et al. (2020)** investigated the relationship between environmental disclosures and idiosyncratic risks of 288 manufacturing firms from the European Union. They found that environmental disclosures help in the reduction of idiosyncratic risk of the sample companies. Recently, **European Central Bank (ECB)** issued a report: "ECB report on institutions' climate-related and environmental risk disclosures" 2020, which tried to explore the disclosure level of climate risks related information in the Single Supervisory Mechanism countries. The ECB found that the institutions were not disclosing comprehensive information related to climate change-related risks. ECB also found that, none of the institutions have complied with the guidelines of set out in "ECB guide on climate-related and environmental risks", and in "Guideline on non-financial reporting: Supplement on reporting climate-related information". In addition, ECB also revealed that the institutions were not complying with the recommendations prescribed by "the Task Force on Climate-related Financial Disclosure". However, European Central Bank found that although the reporting practices related to climate change were very low but the study also found increasing trends in the climate change-related disclosures. Climate risk disclosure may affect export behaviour, as climate risk disclosure is expected to enhance the legitimacy in the society. **Lu et al. (2020)** investigated the export behaviour of enterprises is related to environmental information disclosure. Here the authors divided the environmental information disclosures into two categories i.e. i) Hard environmental information disclosure (EIDH): information relating to the consumption of resources and its negative impacts on the environment ii) Soft environmental information disclosure (EIDS): information relating to the efforts of enterprises to undertake environment responsibility and importance attached to environmental responsibility. Here, they found that the EIDH index is likely to possess more pressure from environmental governance, which is unfavourable to enterprise performance and export behaviour. At the same time, EIDS aims to promote the export of the enterprise by promoting a positive image. After reaching a certain level, EIDH can be transformed into the financing ability of the enterprises, innovation value, and other factors to promote export. Conversely, EIDS can be transformed into the financing ability of the enterprises, innovation value, and other factors of the enterprises. Researchers also explored the relationship between environmental disclosure and financial performance of the companies, for instance, **Nor et Al. (2016)** investigated the relationship between climate change disclosure and financial performance indicators like profit margin, earning per share (EPS), return of investment (ROI), and return on equity (ROE) in Malaysia. They found that profit margin significantly related to climate change disclosure but no significant relationship has been found between climate change disclosures and other financial performance variables i.e. EPS, ROI, and ROE. **Alsaifi et al. (2019)** also found a positive relationship between carbon disclosure and financial performance. This study also revealed that firms that are disclosed moderate about climate change, experience low financial performance. **Wang and Yang (2020)** investigated the relationship between environmental information reporting and the financial performance of the firms. They found that the disclosure of environmental information is significantly associated with the firm's financial performance. **Bui et al. (2020)** investigated the relationship between climate governance and climate change disclosure. They found that to achieve competitive advantages the low polluter firms have disclosed more regarding climate change information whereas the high polluter firms have disclosed lesser to hide their poor performance. They also found that firms with positive, strong, and significant climate governance mechanisms, disclosing more climate change-related issues to bring more transparency in their reporting practices. Climate governance also reduces the over-acclaiming of high performance. Hence climate governance could bring more transparency in disclosing climate change-related information by the firms. They also found no significant relationship between the existing corporate governance and carbon disclosure. **Chithambo et al. (2020)** investigated the relationship between stakeholders' pressure and disclosures of greenhouse gas emission-related information of 350 listed companies from the U.K. for 2011. They consider the pressures from the creditor, supplier, regulator, customer, and board controllers as stakeholders' pressure for the study. The study revealed that stakeholders' pressure has a positive impact on greenhouse gas emissions-related disclosure.

Researchers have examined the disclosures of climate change-related information from a different perspective. Based on the above literature review, the following research gap has been found. The researchers in the past have examined various dimensions of climate risk reporting such as compliance of climate change disclosures, the impact of external stakeholders' pressure on climate change disclosures, etc. Some researchers also explored the relationship between climate change disclosures with firms' financial performance, export behavior. But it has been seen that no study has been conducted on the compliance of reporting practices related to climate change issues with the standards prescribed by the Sustainability Accounting Standard Board (SASB) and requirements set out by the Climate Disclosure Standard Board (CDSB).

The objective of the study: To make more informed decisions, the investors and other related stakeholders need climate change-related quality information, as climate change is widely recognized as the most impactful risk on the firm's operational and financial stability. Some researchers found an increasing trend in firms' disclosure of climate change information. But due to a lack of proper guidance, the reporting information has not become very much useful for decision-making for the different stakeholders. To fulfill the need for climate risk and opportunity-related quality information "Sustainability Accounting Standards Board (SASB)" and "Climate Disclosure Standards Board (CDSB) have developed some standards, principles, requirements, and frameworks for disclosing climate change-related issues. The main objective of the present study is to investigate the level of compliance of the disclosures related to climate change in conformity with the standards issued by SASB and other requirements and principles as provided by CDSB.

Research methodology: Sample size and criteria of Selection: The insurance sector is one of the most exposed sectors to climate risk. The insurance sector revives the economy on and after catastrophe events by absorbing the losses from damages and providing a source of funds in the post-catastrophe event. A well-managed insurance sector could help the economy to revive and restructure faster and in an efficient manner. For the present study, all 34 Indian general insurance companies that are listed on the website of the Insurance Regulatory and Development Authority (IRDAI)have been taken as the population. Out of these 34 IRDAI-listed companies, 28 companies have been taken for analysis and the remaining six companies are not included due to the non-availability of data for the specific period. The general insurance companies are selected for the study because non-life insurers cover a wide range of sectors (like the Agriculture sector, Production of the food sector, Heavy Industrial sector, Electronics, and Automobile sector, etc.) that are more exposed to climate risk.

Collection of data: This paper is based on only secondary data for the period of 2019-20collected from the company's annual reports which are available on the company's official website. For fulfilment of the research objective effectively, the disclosures of climate change-related issues in the annual reports have been compared in the light of the prescribed standards of SASB and requirements of CDSB.

Tools of Empirical analysis: To analyze the data, content analysis has been used to prepare required descriptive tables for the study. More specifically, the content analysis includes parts of each annual report for identifying the information of compliance with the standards provided by SASB and principles and requirements by CDSB.

Data analysis & Findings: The study aims to check the compliance of disclosures by the sample companies regarding climate change-related information in their mainstream reporting practices as per the standards prescribed by the SASB and the requirements set out by the CDSB, and also to check the extent of such compliance.

Climate change-related Disclosures: Recognising the fact that climate change-related information is equally important as financial information to understand the actual corporate performance, one of the main aims towards sustainable development is the disclosure of climate-related risks by the corporates. For this purpose, many national and international organizations have taken remarkable steps and provided frameworks, recommendations, and standards for disclosing climate-related information with their mainstream financial reports. The followings are the few consortiums, standard setters and organizations that have come forward and provided frameworks, standards for disclosing climate-related information.

Climate change-related financial risk and disclosure: Climate change could potentially affect the global financial system through several direct and/or indirect channels. The financial stability could be disturbed by the direct effect of extreme weather events and the indirect impact of the climate risk mitigations activities. To understand the financial risks and opportunities related to climate change of the firms, the investors and other stakeholders need standardized reporting of climate change-related information. In April 2015, the finance ministers and the governors of the central banks of the respective G20 countries gave the responsibility to the Financial Stability Board (FSB) to investigate climate risk-related issues and explore possible mitigation options. In November 2015, the FSB established a task force named 'Task Force on Climate-related Financial Disclosures (TCFD) and realized the need for the disclosures of climate change-related quality information by the corporates. The TCFD prescribed some recommendations regarding the disclosure of climate change-related decision-useful and high-quality information by the corporates. In line with the TCFD's recommendations, the SASB provided some industry-specific 'standards', whereas CDSB provided some 'requirements' for the reporting of high-quality information by the companies. As stated in the SASB published bulletin of October 2018, the CDSB and the SASB have produced and are in the process of developing further tools for climate-related financial disclosures that incorporate and align closely to the recommendation and supporting recommended disclosures of the TCFD.

Sustainability Accounting Standards Board (SASB): The SASB is an independent standard-setter committed to bringing more clearness and transparency in corporate reporting practices. The SASB provided 77 sets of industry-specific standards for sustainable reporting practices that enable the investors and other stakeholders to make more informed decisions. In each set of standards, the SASB developed some specific topics for disclosing sustainable information. For the present study, we have taken the standards issued by SASB exclusively for the insurance industry, in 2018.

Table 1: SASB's reporting standards related to climate change-related information for the insurance sector

TOPIC	ACCOUNTING METRIC	CATEGORY	UNIT OF MEASURE	CODE
Environmental Risk Exposure	Probable Maximum Loss (PML) of insured products from weather related natural catastrophes	Quantitative	Reporting currency	FN-IN-450a.1
	Total amount of monetary losses	Quantitative	Reporting	FN-IN-450a.2

	attributable to insurance payouts from 1. Modeled natural catastrophes , and 2. Non-modeled natural catastrophes, by type of event and geographic segment (Net and gross of reinsurance)		currency	
	Description of approach to incorporation of environmental risks into 1. The underwriting process for individual contracts, and 2. The management of the firm-level risks and capital adequacy	Discussion and analysis	N/A	FN-IN-450a.3

Source: *https://www.sasb.org/standards/download/*

** The above table excluded the following reporting standard as SASB (2018) has removed that standard from environmental risk exposure category: "*Percentage of policies in which weather-related natural catastrophe risks have been mitigated through reinsurance and/or alternative risk transfer*"

Table 2 Compliance of Climate-related disclosures with the SASB Standards

Compliance of climate risk disclosures with the standards prescribed by SASB									
Sl No.	Name of the selected insurance company	SASB's standards code			Sl No.	Name of the selected insurance company	SASB's standards code		
		'FN-IN-450a.1'	'FN-IN-450a.2'	'FN-IN-450a.3'			'FN-IN-450a.1'	'FN-IN-450a.2'	'FN-IN-450a.3'
1	Acko General Insurance Ltd.	X	X	X	15	Manipal Cigna Health Insurance Company Ltd.	X	X	X
2	Agriculture Insurance Company of India Ltd. (AIC India Ltd.)	X	X	X	16	Max Bupa Health Insurance Company Ltd.	X	X	✓
3	Bajaj Allianz General Insurance Company Ltd. (Bajaj Allianz GIC ltd.)	✓	X	✓	17	National Insurance Company Ltd. (NIC Ltd.)	✓	X	✓
4	Cholamandalm MS General Insurance Company Ltd. (Cholamandalm MS GIC Ltd.)	X	X	✓	18	Navi General Insurance Ltd.	X	X	✓

5	ECGC Limited	X	X	X	19	Raheja QBE General Insurance Company Ltd.	X	X	X
6	Edelweiss General Insurance Company Ltd.	X	X	X	20	Royal Sundaram General Insurance Company Ltd.	X	X	X
7	Future Generali India Insurance Company Ltd. (Future Generali IIC Ltd.)	✓	X	✓	21	SBI General Insurance Company Ltd.	X	X	✓
8	Go Digit General Insurance Ltd.	X	X	✓	22	Sriram General Insurance Company Ltd.	X	X	X
9	HDFC ERGO General Insurance Company Ltd.	X	X	✓	23	Star Health and Allied Insurance Company Ltd.	X	X	X
10	ICICI Lombard General Insurance Company Ltd.	X	X	✓	24	Tata AIG General Insurance Company Ltd.	X	X	X
11	IFFCO Tokio General Insurance Company Ltd.	X	X	✓	25	The New India Assurance Company Limited	X	X	✓
12	Kotak Mahindra General Insurance Company Ltd.	X	X	X	26	The Oriental Insurance Company Ltd.	X	X	✓
13	Liberty General Insurance Ltd.	X	X	X	27	United India Insurance Company Ltd.	X	X	X
14	Magma HDI General Insurance Company Ltd.	X	X	✓	28	Universal Sompo General Insurance Company Ltd.	X	X	✓

Source: *Author's own analysis on compliance of disclosures by the sample companies*

Interpretation:

The above table shows that only 03 companies out of total 28 select companies have integrated the keywords "Probable maximum loss" in their mainstream reporting practices. But the standard FN-IN-450a.1 requires disclosure of quantitative information about Probable Maximum Loss (PML) of insured product. It is very much crucial for the investors and other related stakeholders to understand the PML from climate change-related extreme weather events of insured products in making more informed decisions. This standard of disclosure not only provide decision-making information for the insurance sector but also provide information about probable losses in the insured properties or assets of different sector of the economy from climate-related extreme events and/or from re-valuation due to transitional risk. The select companies are not disclosing quality data as per the standard. Whereas 'FN-IN-450a.2' refers to the "total amount of monetary losses attributable to insurance pay-outs from i) modelled natural catastrophe and ii) non-modelled natural catastrophes, by type of event and geographic segment (net and gross reinsurance)" (SASB). Climate change possesses potential challenges for the general insurance actuaries. The standard is well designed but as it is in a nascent stage in India, the selected companies are not disclosing information in this regard. The third standard 'FN-IN-450a.3' is related to the disclosure of i) the approach of incorporating the climate risk into the underwriting process in the case of individual contracts and ii) the approach to managing firm-level risks and capital adequacy. Total 15 companies out of 28 select companies have described the approaches by which they have strategized to manage the losses from the catastrophic events. Though the disclosures by these 15 companies are not exclusively as per the requirement of the standard - FN-IN-450a.3, they are trying to disclose some information about the management of catastrophic losses. These select companies are trying to manage the catastrophic losses by purchasing standard re-insurance policies. Though some of the select companies have disclosed some issues relating to climate change, it is found that the disclosures are still at the introductory stage.

Climate Disclosure Standard Board (CDSB): The CDSB is an international association of business and environmental NGOs, aiming to ensure quality and decision-useful corporate reporting practices by incorporating environmental data with the financial data in the mainstream reporting. The CDSB has provided some principles and requirements for the thoroughness of reporting climate change-related information. These principles and requirements for climate change-related disclosure enable the corporate reporting practice in more transparent and clear way which leads to help the investors and other stakeholders in making better decisions.

CDSB guiding principles: CDSB provided seven guiding principles that ensure the correctness, usefulness and completeness of the disclosures practices regarding climate risk information in the mainstream reporting. These principles shall be useful in determining, preparing and presenting climate change related information in the mainstream reports.

The CDSB has prescribed the followings seven principles:

CDSB prescribed seven principles	
Principle-1 (P1): the principles of materiality and relevance shall be applied in the preparation of information related to environment.	**Principle-4 (P4)**: the disclosing information shall be comparable and consistent. **Principle-5 (P5)**: the disclosing information shall be understandable and clear.
Principle-2 (P2): the disclosing information shall be presented applying the principle of faithfulness.	**Principle-6 (P6):** the disclosing information shall be verifiable.
Principle-3 (P3): the disclosing information in the mainstream report shall be connected with the other information.	**Principle-7 (P7)**: the disclosing information shall be forward looking.

Source: *www.cdsb.net/framework*

Reporting requirements: In the light of the above guiding principles, the CDSB has set out 12 disclosing requirements in environmental reporting in the mainstream reporting practices. The main aim of these requirements is to disclose the decision-useful environmental information as thoroughness as the financial information.

Compliance of climate change-related disclosures with the CDSB's Principles and Disclosure Requirements:

Descriptive analysis of the requirements for disclosure of climate and environment-related information by the Indian Insurance sectors:

Requirement 1- Governance: Companies shall disclose the governance practices of environmental policies, strategies, and related information. The insurance companies are governed by the Insurance Regulatory and Development Authority (IRDAI). Out of the 28 sample companies 23 sample companies are following CSR policy. Out of the 28 sample companies only 16 companies have disclosed that they are trying to manage the catastrophic losses by purchasing re-insurance policies under the guidance of IRDAI. Some selected companies have followed CSR policies under the companies act to cope up with the environmental issues.

Requirement 2- Management's policies, strategy, and targets related to the environment: The management of the sample companies is not following any exclusive environmental policies. Here companies are do not disclosing their climate risk mitigation and adaptation strategies and targets. Though, most of the companies strategized to hedge the climate risk with the help of reinsurance policies. But the companies have not yet disclosed any kind of target for mitigation and adaption of this emerging risk. Companies like Bajaj Allianz General Insurance Company Limited have collected an amount to contribute to the Environmental Relief Fund & As a responsibility towards the protection and sustainability, Go Digit General Insurance Limited started a paperless company with a Go Green initiative.

Requirement 3 – Risk & opportunities: Almost all the sample companies are aware of the environmental risk but out of 28 sample companies only three companies namely Bajaj Allianz GIC Ltd., Future General Insurance Co. Ltd., and National Insurance Company Limited (NIC Ltd.) are disclosing some information about the probable maximum losses (PML) may arise from environmental events. The sample companies are not disclosing the opportunities from the changes in climate.

Requirement 4 – Sources of environmental risk and opportunities: This requirement needs to disclose the quantitative and qualitative impact of environmental risk and opportunities. This requirement also needs to report the methodologies used to evaluate the impact of environmental risk and opportunities. General insurance firms are providing insurance to a wide range of assets and properties which are very much exposed to climate risk. So these firms may have many potential sources of climate risks. The sample companies are providing a number of claims and the losses from the catastrophe events but they are not disclosing the potential sources of these climate risks either in quantitative or qualitative form. They are also not disclosing information about risks that may arise from climate risk sources.

Requirement 5 – Performance and comparative analysis: This requirement needs to disclose a comparative analysis of the performance of the information disclosed in Requirement 4 compared with the targets already set and with the previous period's result. This requirement is not fulfilled by the sample firms in relation to REQ 04.

Requirement 6 – Outlook: The management of the companies shall disclose the effect of environmental risks and opportunities on the companies' future performance and position in a summarised form. The CDSB designed the requirements keeping in the mind the quality information for the suppliers, investors, customers and other related parties. Management of the sample companies are aware of the climate change risk but they are not disclosing any information relating to the effects of climate change on their future performance.

Requirement 7 – Organisational boundary: Here, the CDSB requires that "Environmental information shall be prepared for the entities within the boundary of the organization or group for which the mainstream report is prepared and, where appropriate, shall distinguish information reported for entities and activities outside that boundary". Though climate change-related reporting is as important as mainstream reporting but this kind of reporting is new and it is at the introductory stage in the case of the Indian Insurance sector.

Requirement 8 – Policies for reporting: Organisations shall disclose the reporting policies adopted for preparing environmental information. They also need to make a consistent selection of the reporting provisions in disclosing environmental data from one reporting period to another. The sample companies are disclosing and reporting qualitative and quantitative information as per the Companies Act, 2013 and IRDAI Act, Rules and Guidelines. Exclusive policies and standards for disclosing and reporting climate-related information provided by the national and international organizations are not adopted but they are partially disclosing some data relating to the issue.

Requirement 9 – Reporting period: CDSB requires reporting of environmental information with the mainstream reporting practices on an annual basis. The maximum numbers of sample companies have disclosed some environmental-related data in their mainstream reports on an annual basis. Out of 28 selected companies, 23 companies have disclosed CSR-related disclosure in their mainstream data on an annual basis.

Requirement 10 – Restatements: This requirement needs to represent the previous period's statement of performance. Companies are disclosing previous year's financial statements but they are not disclosing informative and material restatement related to climate change and environmental information in their mainstream reporting practices.

Requirement 11 – Conformance: This requirement needs to disclose a statement of conformance with the framework provided by the CDSB. Sample companies are not including such statements of conformance in their reporting practices.

Requirement 12 – Assurance: "If assurance has been provided over the reported environmental information, which is in conformity with the CDSB Framework, this shall be included in or cross-referenced to the statement of conformance of REQ-11". It is observed that the sample companies are not including such statements of conformance in line with the CDSB framework.

Discussion & Conclusion:

In general, the insurance companies do not yet comprehensively disclose climate risk information. None of the companies are adopting exclusively the prescribed guidelines and/or standards for climate risk reporting practices. However, this paper provides clear evidence that the sample general insurance companies are trying to disclose some issues related to climate change. Reporting of probable maximum losses may arise from the physical damage of insured assets and properties and from the revaluation of carbon-intensive assets. Out of 28, select companies, only 03 companies have disclosed the probable maximum losses that may arise from unexpected events. But the select companies are not disclosing information about the "total amount of monetary losses attributable to insurance pay-outs from (1) modelled natural catastrophes and (2) non-modelled natural catastrophes, by type of event and geographic segment (net and gross of reinsurance)" CDSB. Total 15 companies out of 28 select companies have described that they are purchase reinsurance policies to manage the losses from catastrophic events. The overall disclosure regarding climate change and the environment by the Indian insurance sector is at its introductory stage. This paper also tries to examine the extent of climate-related disclosure compliance with the principles and requirements, and requirements set by the CDSB. The CDSB provided 12 requirements for the disclosure of climate change-related decision-useful information. With the help of content analysis under the CDSB requirements, it has been found that most of the insurance companies are disclosing and reporting qualitative and quantitative information as per the Companies Act, 2013 and IRDAI Act, Rules and Guidelines. The voluntary guidelines, standards and requirements provided by SASB and CDSB for the reporting of climate risk-related quality information have not been adopted by the sample companies but they are trying to disclose some data related to climate risk. Among the 28 sample companies, 23 sample companies are following CSR policies. Though there are some disclosures related to environment and climate change on an annual basis but the information was not as per the requirements provided by the CDSB. The companies were also unable to fulfil the REQ 10, 11 and 12 in their mainstream reporting practices. Climate risk disclosure is a reporting practice that is still at the introductory stage in Indian insurance sector.

Indian general insurance sector particularly comprising of the general insurers is aware of the climate risk but only a few companies in this sector are disclosing some issues relating to climate risk in their mainstream reports. The disclosures of climate change-related information are also not in compliance with the standards and principles prescribed by the SBSB and the CDSB. It is observed that this sector is at very introductory stage of disclosing climate change-related information with their mainstream reporting practices. The overall disclosure compliance by the insurers in conformity with the standards and requirements is inadequate. They are reluctant to voluntary nature of the policies and guidelines in respect of disclosures of climate change-related information. Present study is not free limitation. For the analysis purposes, the present study has considered only 28 select companies in Indian General Insurance Industry, out of 34 general insurance companies registered with the IRDAI. Remaining 06 companies are excluded from the study. The study has analysed the compliance of climate related disclosures for the year 2019-2020 only. So the available result may not reflect the true picture in the area of the study.

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