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Report

India Responsible Capital Conference (IRCC - 2023)

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Indian Institute of Management Ahmedabad

Co-Organized by

Arun Duggal Centre for ESG Research

Misra Centre for Financial Markets and Economy

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Introduction

Opening of the Conference by Conference Committee

Prof. Anish Sugathan

"The purpose to organise IRCC-2023 was to create a platform where practitioners, academicians, researchers, students, and the public in general can come together and present their ideas and research work in the field of Environmental, Social, and Governance (ESG). If we analyse most of the talks at COP28, we will notice that the discussions were majorly about how green finance could become an enabler for various environmental objectives of the Intergovernmental Panel on Climate Change (IPCC). However, the fact that finance is being seen as an enabler tells us that there are present day challenges.

In finance, we talk about inter-temporal allocation of resources. If we take into account the allocation of scarce resources, we should understand that finance has become an important tool for sustainability transition. Presently, the technology curve does not fit with the market economics mandate. We need viability gap funding, instruments like subsidies, taxes, etc. for a successful sustainability transition to take place."

Prof. Sanket Mohapatra

"We have an exciting lineup of speakers, panel discussions, and paper presentations here at IRCC 2023. We have a panel discussion on policy design and sustainability coming up. It features Shri Amit Sinha, General Manager of the Sustainable Finance Group, which was created about two years back within the Department of Regulation at the Reserve Bank of India (RBI), Dr. Prasad Modak, Managing Director of the Environmental Management Center Pvt. Ltd., and Prof. Namrata Chindarkar, who is a faculty at IIM Ahmedabad and the Chair of the JSW School of Public Policy at IIMA. Another panel discussion will focus on the role of innovative startups in driving sustainability. It features three startups. The panelists are Satish Ramchandani, the co-founder of Updapt; Bhagyashree Bhansali, founder and CEO of The Disposal Company; and Mr. Bhaktha Keshavachar, co-founder and CEO of Chara Technologies. Furthermore, Caroline Flammer who is a Professor of International Relations and of Climate at the Columbia University will join Manpreet Singh, Partner, PwC India for a panel discussion on sustainable finance and investments."

Prof. Naman Desai

"This is the first time we are conducting a conference in India with a sharp focus on ESG and sustainable finance. IRCC 2023 will have six concurrent sessions for the paper presentation tracks. The broad topics around which the paper presentations will revolve are: ESG and Related Regulatory Mechanisms, Climate Change and Macroeconomics, Green Finance, Corporate Governance, Investor Behaviour, and Sustainable Value Creation. This is going to be a very enriching experience for all the participants.

The importance of green financing in the context of sustainable development cannot be overstated. Green financing can enable sustainable development and help build a greener future. Further, a balanced and just allocation of scarce resources has become all the more significant, given the increasing rate of depletion of natural resources. While technology is the central piece of innovation when it comes to dealing with environmental problems, in practical terms, the technology curve many times does not align with the market curve.

When a comparison is drawn between ESG-based investments and system-level investing, ESG-based investments often perform better. The utmost need to move towards a green economy is intricate for a holistic and sustainable development of our future economy. Furthermore, various recent research studies have shown that socio-environmental responsibilities improve competitiveness of firms, enhance employee governance, product market development and market for government procurement contracts, and help sustain competitiveness more efficiently.

Handling various environmental and social issues with more concern can be beneficial to companies in terms of their economic performance as well. Moreover, a well-designed governance structure and long term financial, environmental and social performance criteria are needed to improve a company's sustainable practices."

Keynote Address

Prof. Caroline Flammer
Professor of International and Public Affairs and of Climate
Columbia University

Prof. Caroline Flammer, in her keynote address on, "ESG vs System-Level Investing", presented her thoughts on responsible capitalism, what the empirical evidences suggest, and what does the future look like. She shared the perspectives from the real economy first and then discussed the perspectives of the financial sector. She highlighted that it is very important to understand the interrelationship between the real economy and finance to figure out how they interact with each other and how do they potentially influence each other.

From a corporate perspective, the big picture question is, "Do companies' social and environmental responsible practices help improve their competitiveness?" The short answer to this question is: Yes, they can. On average, companies' social and environmental responsible practices can be beneficial. The social and environmental responsible practices of companies can improve their competitiveness along various dimensions:

- can help foster innovation and prevent knowledge leakage.
- can enhance employee governance. It can help firms attract, motivate and retain talented employees.
- can also help companies differentiate themselves from competitors on the product market and on the market for government procurement contracts.
- can help sustain competitiveness during economic crises.

There are studies that have looked at the COVID crisis and found that companies' social and environmental responsible practices allowed them to become more resilient and come out of the crisis in a stronger way than other companies. In light of these positive aspects, it is not surprising that companies' social and environmental responsible practices can positively affect shareholders' perception and shareholders' returns.

The bottom line is that companies' social and environmental responsible practices should be integral to their strategy and corporate governance. However, that is often not the case. Most often, the 'E' and 'S' practices are not considered core to a business. One potential reason for that is the lack of good governance practices, such as the lack of long-term orientation and the lack of private incentives to care about the social and environmental issues.

Research shows that well designed governance practices, such as, the linking of compensation to long term financial performance or to specific environmental and social practices, can help improve the governance of the companies, improve the firm value, and also improve the social environmental practice of the company.

To summarise, the E & S of ESG (environment, social, governance) are an integral part of G (governance). In other words, governance is a function of the environmental and social practices of a company.

Shifting the focus to managers, there are different forces and pressures that managers face in the context of climate change. Manager are exposed to increasing risks and costs associated with climate change, be it increased energy demand, damage of coastal property and infrastructure leading to a decrease in public health, water supply, agriculture production, etc. Governments are increasingly taking actions to curb climate change. The prime example is the Paris Agreement, in which 195 nations agreed to limit global warming to below 2°C. Research indicates that even the threat of strict environmental regulation can send a strong signal to investors and other constituencies of carbon intensive companies. In addition to these factors, there is an increasing social pressure by social activists and by society, in general, on companies' managers to take action. This pressure is further intensified with the use of social media. Moreover, shareholders as well as investors of companies also put increasing pressure on their portfolio companies to improve their social and environmental responsible actions and to disclose their exposure to climate change risks. This is evident from the increase in the number of signatories of the Principal Responsible Investors (PRI) which is the largest network of responsible investors.

To illustrate better the increasing trend of investors who are concerned about their portfolio companies' social and environmental practices, the findings of a study on Corporate Social Responsibility (CSR) related shareholder proposals can be useful here. It is worth noting that there is an increasing pressure of shareholder activism on their portfolio companies when it comes to environment and society. In the study, the shareholder proposals majorly covered environmental issues, issues on sustainability report, social issues, animal rights issues, human rights issues, health issues, labour issues, etc. Over time, there has been an increasing number of shareholder proposals being submitted to companies on these issues, and the approval rate has also witnessed an increasing trend. The shareholder proposals initially were primarily about environmental and labour issues. The same study, if conducted today, would probably highlight the significance of shareholder proposals on the addition of women and minorities on Board, and on corporate reporting.

In the United States of America, as research indicates, the investors who actively engage with their portfolio companies and submit these proposals come from religious groups, and are phenomenally unsuccessful. In comparison, similarly active but much more successful in getting the support of other investors to vote in the favour of their proposals are the Public Pension Funds and the Sustainable Responsible Investing (SRI) Funds. A plausible explanation for why the proposals by religious groups are not successful is that they are framed in a more normative or ethical way, whereas the proposals by the Public Pension Funds and the SRI Funds try to make a business case in their proposals, which turns out to be more convincing for the investors. The findings show that the companies which adopt these proposals and actually improve their social and environmental practices do show an improvement in their firm value and an enhanced operating performance in the long term.

In many countries around the world, there is a lack of mandatory disclosure with respect to climate change risks, in particular, and ESG in general. When it comes to climate change risks and the disclosure thereof, there might be some benefits that come with disclosing these risks. For example, it may help firms to manage and mitigate these risks moving forward. The disclosure of climate change risks enhances the transparency which in turn increases the firms' accountability in the public's eye. This further strengthens the firms' commitment to manage and mitigate these risks in the future. In addition, transparency allows investors and other constituencies, such as the suppliers or buyers of these companies, to engage with the disclosing firms in a more informed fashion and potentially help them manage these risks. Transparency can also foster trust, which again helps strengthen the firm's relationships with investors and other stakeholders.

The downside here is that these benefits are likely going to kick in only in the long term, while the potential costs of disclosure materialise in the short term. Disclosing climate change risk exposure may reveal vulnerabilities that the firms would prefer to keep secret. Disclosing these risks also entails direct costs. Human capital is required to assess and report these risks. In addition, disclosing climate change risks might actually lead to adverse reactions that may exacerbate a firm's overall exposure to climate risk. Since the downsides of disclosing climate change risk exposure are likely going to materialise in short term and the benefits apply only in the long term, management has an incentive not to disclose these climate change risks unless it is forced to do so or unless it faces shareholder pressure to do so.

The reason behind focusing on short term over long term is also highlighted in a large literature in psychology and economics. Individuals in general, are also called “hyperbolic discounters”, meaning they have an excessive preference for the present. As a result, short term rewards are preferred over long term rewards even if the long-term rewards are substantially higher. For managers in particular, this myopic behaviour is further reinforced by short term compensation, short term pressure to meet analysts' expectations, and career concerns.

This is to also say that managers might be much more myopic than their own investors, and therefore might not act in the best interest of the company. This gives rise to what is known as a time-based agency conflict. Managers may put more weight on the potential short-term downsides of disclosing their climate risk exposure as opposed to the long-term benefits. Furthermore, managers may focus more attention on those stakeholders that have short-term financial implications for the company's performance as opposed to those stakeholders that are valuable for the firm in the long term, and do not have short term consequences. In other words, unless government regulation requires companies to disclose their exposure to climate change risks, companies are compelled not to disclose their exposure to these risks.

Given that managers tend to be short term oriented and only engage in investment strategies that have short term financial implications, it also for their firms as opposed to long-term implications also means that they might be reluctant to actually adapt to climate risks. This is confirmed by recent studies. In a study on whether or not companies adapt their business strategies to physical climate change risks, it was found that only about 23% of the companies adapt in some way, and those companies that do, tend to do quick fixes as opposed to fundamentally changing the business strategy.

Increasing risks and costs of climate change have led to increase in governments taking actions. There are increasing pressures on managers by social activist groups and society to improve the social and environmental responsible practices. As a result, the Board of Directors may rethink the existing governance practices and policies, and adopt new governance policies that help improve the firm value. The linking of executive compensation to long term financial performance can help managers adopt a longer time horizon and invest more likely into longer term strategies that are financially beneficial to companies. Additionally, the linking of compensation to specific environment and social business practices, which is also known as 'CSR Contracting' or 'pay for social and environmental performance' or 'ES(G)-linked compensation can be adopted.

To conclude, studies show that managers have a propensity to give priority to salient stakeholders with urgent claims and short-term performance implications, unless incentivized otherwise. The insights from a broader literature suggests that corporate short-termism is hampering business success. It not only hurts the business and investors, but also society, and the natural environment.

In terms of the financial sector's perspective of ESG, there is research which suggests that there is a positive relationship between ESG and financial performance and a negative relationship between ESG and financial risk. This implies that trying to improve the social and environmental practices of the portfolio companies on average should be beneficial for an investor. Some of the ESG investment strategies that investors can pursue to influence their portfolio companies' ESG practices are:

1. ESG Investing in Equity
· Passive
    o ESG Screening
    o ESG Integration
· Active:
    o ESG Shareholder Engagement
    o ESG Shareholder Activism

The passive types of strategies are how typically ESG investing is followed. However, the studies have shown that the active strategies including ESG shareholder engagement and ESG shareholder activism have proven to be more effective in triggering change in portfolio firms' ESG practices.

2. ESG Investing in Debt
· Green bonds, climate bonds, social impact bonds, sustainability linked bonds, etc.
    o Bonds whose proceeds are committed to finance ESG-related projects

Over recent years, the market has really seen a 'green bond boom'. As per data, on average, green bonds have real impact, and are not merely a greenwashing tool. They lead to improved financial as well as environmental performance. In the case of uncertified green bonds however, there are concerns of greenwashing due to the lack of public governance. Certification can serve as an important governance mechanism in such a case. The lack of public governance in the green bonds space gives rise to many challenges. Some of those challenges relate to the ambiguous definition of "green" which further complicates certification, the presence of multiple taxonomies which may impede effectiveness, efficiency and integrity of the market, and binary certification which offers very limited information to outsiders.

On a related note, the transition to a carbon neutral economy not only requires transition to carbon-intensive industries, but also requires major investments. The transition to a carbon neutral economy would also raise important social challenges as the transition to a low carbon economy involves job losses, dying industries, geopolitical tensions, etc. Dealing with these social challenges requires ensuring a "just transition" that does not worsen social inequalities within countries as well as across countries.

At present, we are in the midst of multiple crises, climate change, biodiversity loss, social inequality, poverty, etc. Generally, the governments are expected to regulate, take actions and implement effective public policies to mitigate these system-level challenges. However, efforts by the governments are not sufficient. This puts the spotlight on the private sector.

The current ESG practices and sustainable finance practices are confined to the portfolio level and firm level. The underlying assumption of the modern portfolio theory is that the systemic risks are exogenous and not endogenous. This leads to a convenient assumption that there is no interrelationship between investments and climate and the increasing systemic risks on the portfolio. There is an enormous financing gap, not just about financing climate, but also about financing the protection of biodiversity, mitigating social inequality and poverty, etc. Traditionally, the way these societal challenges have been funded is through development funding, public funding and philanthropic funding, but it is not sufficient. The key question here is: how to attract more private capital into this market to close the financing gaps and help tackle these issues? This is where blended finance comes in. Blended finance is not new, but still in its infancy because very little is known about the best practices of blended finance. Blended finance blends together private capital and public funding, and the public and philanthropic funding helps

subsidise and raise private capital investments. Therefore, it becomes more appealing for the private investors to come in.

To mitigate system-level challenges and achieve a more sustainable world, there is a need to develop better measures that really help track progress towards mitigation of these challenges. A systems-focused approach needs to be adopted that takes into account how business and investment practices impact the broader (environmental, social, and economic) system, and also how the broader system impacts business and investment practices. Public private partnerships (blended finance) need to be created to fill the financing gap.

Concluding Remarks on Public Funds:

Public funds including pension funds and sovereign funds are among the biggest investors and own a large part of the global assets. They have a long-term horizon, meaning they are interested in the long-term health and wealth of their economy. They can also provide the necessary long-term capital needed to make these longer-term investments (to fund ESG projects). In other words, public funds have the power and the necessary long-term horizon to trigger effective change in their portfolio companies' ESG practices. Public funds have the opportunity to not only improve their own ESG practices, but also actively engage with their portfolio companies on ESG issues, such as, align the executive pay with longer term goals and pressure them to disclose the ESG risk exposure. Since public funds are large institutional investors, many other private and small investors actually follow their lead, which further enhances their effectiveness in triggering change. Moreover, public funds can invest in certified ESG fixed income instruments, and engage with policy to trigger systemic change, which would likely help make the environment, social and economic systems more resilient and decrease the overall systemic risk.

Special Address

Shri Amit Sinha
General Manager
Sustainable Finance Group,
Department of Regulation
Reserve Bank of India (RBI)

Shri Amit Sinha, in his special address covered the aspects of regulatory issues and perspective on how to address climate related financial risks and to promote green financing. He broadly addressed three major questions:

1. Why is the Reserve Bank of India (RBI) concerned about climate related financial risks?
2. What has RBI done or is doing to regulate and mitigate the challenges of climate change financial risks?
3. What is the expectation from the banks, non-banking financial companies (NBFCs), and other regulated entities of RBI in the context of climate change financial risks?

RBI as a full-service central bank is the supervisor of the regulated entities of the financial system, and is responsible for currency management, foreign exchange management, monetary policy, R&D, etc. The preamble of the RBI Act broadly states that RBI has to operate the currency and credit system of the country to its advantage, and maintain price stability in the country by keeping in mind the objectives of growth. Climate change, through alterations in temperature and precipitation patterns, could significantly impact the macroeconomic stability of the economy. This could have implications for inflation and economic growth and that is why RBI and other financial regulators are concerned about climate change.

A bank is a trust institution. Banks are into the business of accepting deposits and lending investments. When the bank lends, it is basically doing a maturity transformation. The entire banking system is built on the premise of risk management. If a borrower defaults, the bank faces credit risk, which is a significant concern as it impacts the bank's ability to repay its depositors. Rising interest rates leading to increased yields can also expose banks to market risk. If a bank faces liquidity issues due to depositor withdrawals, it may incur losses. Thus, RBI is deeply concerned with climate risk, as it intersects with financial, credit, liquidity, and operational risks, potentially affecting financial stability.

RBI's efforts to regulate and mitigate the challenges of climate-related financial risks can be summarised by the 5Cs, "Contributing to the Coordination efforts to Combat Climate Change". Climate change cannot be handled by one individual, one institution or one government. It is a massive problem which needs coordination of various sectors. RBI contributes to these coordination efforts both domestically and internationally. Domestically, it coordinates with other financial regulators, such as the Securities Exchange Board of India (SEBI), the Regulatory Development Authority, the Government of India, etc. Internationally, it coordinates with institutions such as the Financial Stability Board (FSB), the Basel Committee on Banking Supervision (BCBS), the Network for Greening the Financial System (NGFS), the International Platform for Sustainable Finance (IPS), etc.

RBI issued its first circular on Corporate Social Responsibility (CSR), non-financial reporting, and sustainable development in December 2007. In 2012, the renewable energy sector was added to priority sector lending. Priority sector lending refers to lending by banks that is dedicated to specific sectors, such as, agriculture, micro, small and medium enterprises (MSME), education, housing, etc. Banks were advised

to consider loans to individuals up to INR 10 lakh under priority sector lending. In 2015, when the Paris Agreement was signed, the guidelines of the priority sector lending were tweaked. The loan limit for the non-individual borrowers under priority sector lending was now made INR 15 crore. In the initial years, there was an increase in the loans under priority sector lending for renewable energy projects. However, by 2018-19, financing to the renewable sector showed signs of decline. This led to an increase in the loan limit from INR 15 crore to INR 30 crore, where it stands today in 2023. In April 2021, RBI joined the Network for Greening the Financial System (NGFS). NGFS is a network of central banks and supervisor with 140 members globally, including the International Monetary Fund (IMF) and the European Bank for Reconstruction and Development (EBRD). NGFS is in existence since 2017 to share the best practices for promoting green financing and addressing climate related financial risks. In 2023, RBI became one of the steering committee members of NGFS which is responsible for driving the agenda of the organisation. In May 2021, under the Department of Regulation of RBI, Sustainable Finance Group (SFG) was set up to lead the regulatory issues of the Reserve Bank of India. In 2021, during COP26, RBI in a press release announced that it will undertake the integration of financial risks into financial stability monitoring, conduct climate scenario analysis to assess the vulnerabilities in the regulated entities' balance sheets, and promote capacity building.

In 2022, RBI conducted a survey covering all the major foreign banks, public sector banks, and the private sector banks. Key findings included a recognition of climate change as a material threat but inadequate top management engagement. While many banks disclose climate risks, the disclosures lack standardization, highlighting data challenges.

The survey provided an insight into where the banks stood in the context of climate change and its mitigation. The next step was to frame regulations. Therefore, a discussion paper was launched which set the tone for the financial sector for urgency of action on climate change. The discussion paper received more than 1300 responses from NGOs, international organisations, academicians, bankers, etc. The suggestions received covered different aspects, such as disclosures, climate stress tests, regulatory policies, monetary policies, etc.

In January 2023, RBI issued its first sovereign green bond where the funds raised were exclusively dedicated to green causes. In April 2023, RBI announced a new framework to offer green deposits to its customers, aiming at developing a Green Finance Ecosystem in India. A green deposit refers to an interest-bearing deposit received by a regulated entity for a fixed period, with the proceeds earmarked for allocation to specific sectors. RBI has undertaken several initiatives in recent times and in quick successions to address the challenges that climate change pose.

In conclusion, if the challenge for banks is climate change, the solution lies in addressing each aspect represented by the word 'Climate'.

C: **Corporate Governance**, which drives the risk management framework.

L: **Liquidity and Capital Adequacy Assessment**, required in scenarios of unexpected losses.

I: **Internal Control Framework**, wherein all the Three Lines of Defense of a bank, namely, the operational management team, the risk management/compliance team and the internal audit team, challenge each other.

M: **Management** of Financial Risks, such as credit risk, market risk, liquidity risk, operational risk, etc.

A: **Adherence**, refers to statutory compliance. It is very important for a bank to comply with the norms.

T: **Testing** the climate vulnerabilities in the balance sheet, possible with the help of climate stress test and climate scenario analysis.

E: Building **Expertise**.

Panel Discussion I: Sustainable Finance and Investments

Panellists:

Prof. Caroline Flammer
Professor of International and Public Affairs and of Climate
Columbia University

Manpreet Singh
Partner
PwC India

Moderator:

Prof. Anish Sugathan
IIMA

Prof. Anish Sugathan:

Held under the aegis of the PwC ESG Forum at IIMA, this panel discussion was kicked off by Prof. Sugathan introducing the two panelists. He initiated the conversation by positioning sustainable investments as a strategy not just for the corporate sector but also for policymakers, with the end goal being accelerating net-zero goals at the macro as well as the corporate level, where companies are developing strategies to achieve individual targets, and how we can meet them from this point forward. He first turned to Prof. Flammer to gain insights into, based on her research, how sustainability practices are being integrated in corporate business strategies and policies.

Prof. Sugathan mentioned how the old maxim, "throwing money at your problems", applies to the current climate situation. What he meant was there is an underlying belief among a large number of countries that simply putting in more capital will help tackle the challenges of climate change. There is some truth to this thinking, because capital is one of the strongest forces at our disposal at the moment. He related this perspective to the on-going COP28 in the UAE, where climate finance and ways in which climate finance flows can be directed toward the Global South have been at the heart of the negotiations and discussions taking place at the event. However, simply doling out money without backing it up with sound economic theory or rationale will not have desired outcomes. Here, Prof. Sugathan brought up the issue of viability gap funding and touched upon how this kind of funding is critical to develop technologies and pathways that are essential in meeting the 1.5 degrees Celsius goals. Carbon, for instance, is one area where viability gap funding can prove instrumental. The key, however, lies in how carbon can be made into a currency and incentivized as an exciting investment opportunity. At present, carbon capture technologies are not "in the money", implying that investing in them is not profitable for businesses. For this table to turn, carbon needs to be priced accurately through a collective choice, such as a tax, which will ensure it has the backing of the government. This is how carbon can become a currency and create investment opportunities for businesses.

Prof. Sugathan mentioned other sources of energy, namely, bioenergy, which is being deployed in Europe. He talked about how European countries are developing microbio agri-waste residue and the role stirling engines play in distributed power in the region. Switzerland has been at the forefront of bioenergy, and even India currently generates 30% of its primary energy from bio-waste. He asked Mr. Singh if there is any possibility of a technology transfer occurring between the European Union (EU) and India anytime soon.

He also directed everyone's attention to the "S" in ESG, which stands for "Social". He pointed out that at the heart of the Sustainable Development Goals (SDGs) lies in the issue of poverty. While identifying and measuring carbon is possible, the social challenges associated with the low-carbon transition process are complex and interlinked with several other economic, political, and environmental problems. He, therefore, raised the following question for the panelists: How can finance and investments help tackle the challenges related to the "S" in ESG, since it is a pivotal factor in achieving the SDGs?

Bringing together the views of both the panelists, Prof. Sugathan raised the point related to standardization and taxonomy of climate finance. He highlighted the confusion associated with the term "climate" and how the lack of standardized climate taxonomy has created an "exclusion list". Similarly, "social" is an amorphous and ambiguous term, and clarity is needed to connect social factors with the mainstream financial industry. In India, there exist impact debt funds, who do project aggregation and then package it with bigger investments made for bringing about social impact. What's interesting is the investment criteria followed by these entities to identify which projects qualify as social impact. This simply shows that standards creation is a research problem, especially from an investment standpoint, in the social impact sector.

Prof. Caroline Flammer:

Prof. Flammer responded by first acknowledging that the question asked was a complex one, given the length and breadth of the corporate sustainability space and the various factors shaping it. From her viewpoint, the increasingly practical employment of sustainability practices by companies and the ever-expanding practices in the field of sustainable finance have been encouraging signs. However, she felt most excited about the kind of research being done and scholarship being generated in the Environment, Social, and Governance (ESG) space. While management scholars have been providing research support to augment corporate sustainability, the entry of finance and accounting professionals in this field is even more exciting, according to her. On the flip side, she pointed out that the focus of research on corporate sustainability in general and ESG in particular has been on how these measures will financially benefit the company in the short term. For financial scholars working in this field, the pressing issue has been estimating the impact of ESG investments on portfolio performance. As a result of this approach, Prof. Flammer opined, companies are adopting passive ESG investment strategies in the form of exclusion, divestment, and thematic screening.

ESG integration into portfolios has also been lackluster, with evidence showing only a weak engagement between the portfolio company and the investor. This has been the dominant sustainability practice by the corporate world. Nonetheless, Prof. Flammer found the direction in which ESG research is moving quite promising. As a growing number of scholars are stepping into the field, she believes that relevant questions are being raised. For example, finance and management scholars are now asking whether ESG investments are bringing about actual change and whether adopting sustainable practices is changing the underlying business practices of the portfolio companies that organizations invest in. These are deeply moral questions that can have significant influence in corporate decision-making.

Talking about corporate sustainability at the global level, Prof. Flammer highlighted the efforts being taken by the Principles for Responsible Investment (PRI), an international network of financial institutions supported by the UN, to push signatories to move beyond thinking

just about capital allocation and engaging with portfolio managers and companies. According to her, the PRI network is actively encouraging investors to become positive change agents in terms of coalition building and policy engagement with the government. This will be critical, as stakeholders can then pressure governments to formulate and implement effective policies focused on sustainability, which is something the world desperately needs.

Responding to Mr. Singh's views on climate funds, Prof. Flammer put forth two crucial points. First, she pointed out that the climate funds that Mr. Singh was referring to are fairly recent, which begs the question if they really are fighting climate change. Since their investments in climate technologies are not likely to show results in the immediate future, we can only make a broad assessment of the potential impact of the measures they are taking presently. Second, what we are currently facing, according to her, is an enormous financing gap, especially in the Global South. The focus right now, therefore, must be on building new avenues to channel more capital into the Global South for investing in climate technologies, clean technologies, nature-based solutions, and renewable energy. This channeling of capital into the developing world is also an important policy question and must be taken up as a priority by policymakers around the world.

Prof. Flammer recognized that some ESG and other such investments might not be a business case because the perceived risks may be too high. What's important is that these assessments must be done keeping in mind the environment and the context of the investment. Here, Prof. Flammer also brought in the importance of planning finance, an area that has not been researched academically at all. According to her, most of the finance literature has focused on public finance markets, while some have looked at private finance markets. But no researcher has studied the role of development finance institutions and philanthropic organizations working in the Just-Transition space. This also raises questions about blended finance, which is the use of development finance for the mobilization of additional finance towards sustainable development in developing countries. The Loss & Damage (L&D) Fund of the COP28 is an example of blending, as it insures and derisks investments for the private sector. Moreover, as Prof. Flammer observed, there are other investment derisking mechanisms that can be adopted to attract private investment.

One such mechanism is subsidizing private capital investments through concessionary funding or grants, such as the L&D Fund. The other way of de-risking investments is by providing technical assistance to countries, thereby increasing the probability of success of these projects. There is also the possibility of having different preferred rates of return. Prof. Flammer was trying to make the point that investors and financial institutions need to explore different de-risking mechanisms that can improve the risk-return profile of these investments, which in turn can attract more private investments. Unfortunately, even in this area, there is no academic research being done due to a potential lack of awareness. Thus, there is a pressing need to think beyond silos and build alternative solutions. For Prof. Flammer, the critical question, which applies to both theory and practice, is how we can build up a marketplace for blended finance, keeping the needs of the Global South in mind. But first, we need people who can assess projects, evaluate them, and make them invest. A major hurdle in achieving this, highlighted Prof. Flammer, is that currently there is no centralized database that allows investors to identify and assess potential projects that they could invest in. Developing such a database could be tremendously helpful in match making projects and startups at the global level. Further, what also needs to be taken into consideration are the different requirements and restrictions of the different types of investors, be they institutional investors, philanthropic organizations, or development finance institutions. The other challenge with these projects is how to scale them up to attract the big players. This, according to Prof. Flammer, is an interesting research area where academia and development practitioners can work together and produce tangible outcomes.

While the business case for several of these projects might not be perceived to be there presently, Prof. Flammer observed that there are several business opportunities in the domain of nature-based solutions. Working in the field of biodiversity finance, Prof. Flammer recalled how finance scholars questioned the idea of making money by protecting nature when she presented her research to them. Once they realize how this domain is a profitable business case, they then wonder why more capital is not flowing into nature-based solutions. This lack of awareness among the business community is why some of the most obvious investment areas are often overlooked. We are focusing on advanced solutions such as cleantech and renewable energy to transition to a low-carbon economy. What we forget is that nature provides a natural and effective carbon sink, which is fundamental to address the climate crisis and others, such as the biodiversity crisis. This opens up a whole new range of potential projects, and with the Global South being rich in biodiversity, it makes economic sense to start more projects in these countries, especially those related to nature-based solutions, which will automatically ensure an increased and sustained flow of capital. An interesting idea proposed by Prof. Flammer was restructuring the financial debt of biodiversity-rich countries using nature as a condition. For example, if a country like Brazil needs a loan, the terms of credit should have a special condition that access to the loan will be contingent on the Brazilian government protecting the Amazon rainforest. Such conditions will essentially convert nature into a capital and countries with greater biodiversity will now have more negotiating power and better leverage at the international level.

For Prof. Flammer, in the case of social impact evaluation, the next step in the process is to ask whether third-party assessments of the impact of social bonds or sustainable bonds are effective and whether the proceeds are actually being invested in the areas where they need to be invested in. Companies are now calling regular bonds as social impact bonds to attract different types of investors. The need, therefore, today is to move toward a systems-focused approach and ask if these specialized bonds are creating any additional impact. This is an aspect that policymakers should consider in their deliberations.

Mr. Manpreet Singh:

Taking in the views of Prof. Flammer, Prof. Anish then asked Mr. Manpreet Singh to share his insights from a corporate perspective. He started off by expressing his wish to take forward Prof. Flammer's point on how equity and asset managers are integrating ESG considerations into their portfolios. According to him, this process of integration is still in its nascent stages. Referring to the development of the ESG space in the US, he said that "the pendulum has just started to swing to the other side". At the moment, the whole debate on corporate sustainability has become a politically polarized issue. Mr. Singh gave the example of conservative states, such as Texas and Florida, where conversations on ESG and related matters are suppressed when it comes to investment decisions. Therefore, regional and geopolitical factors have also started playing a central role in impacting investors' decisions on integrating ESG. These factors have also led several companies to withdraw from global alliances, such as the PRI, as well. He further stated that many companies are also rescinding their commitments to the Science Based Targets initiative (SBTi). According to him, there is widespread confusion among the investor community about what the current situation is, what needs to be done about it, and whether the targets will be met within the stipulated time frame. Initially, there was a thought as to whether or not these business models yield the kind of returns that they expect their portfolios to have. As a result, there is little to no real transition process in place in the case of small and medium asset management companies, with several of them saying that these targets cannot be achieved at all.

At the same time, large companies are taking efforts to align their strategies to net-zero targets and comply with the changing policy frameworks, performing the necessary due diligence. According to Mr. Singh, now asset managers know what their portfolios consist of and the level of their carbon intensity. However,

large data gaps due to lack of access or availability are hindering these companies' ability to determine the baseline intensity of their portfolios. Overall, Mr. Singh sees large asset management and equity companies moving in the right direction in terms of corporate climate action.

The same cannot be said for small and medium asset management companies, unfortunately. As per Mr. Singh, these companies are not even collecting data, which indicates that there is a major gap in terms of the thought process required to even consider ESG-driven investments, all the while continuing with their conventional investments. He went on to elaborate how certain companies call themselves a "climate fund", because they are investing in areas such as deforestation, agriculture, and hydrogen. Simply investing in these areas cannot be a strong enough criteria to term a company a climate fund. Climate transition will involve measuring emissions, categorizing and reporting them, and also pushing your portfolio companies to do the same, said Mr. Singh. That, however, is not their current line of thought. These companies intend to move slowly and not be bullish by obligating their investors to report emissions or take drastic actions to reduce their carbon footprint. This is where corporate climate action stands at present, as explained by Mr. Singh. What's important is that small and medium asset management companies are thinking about creating climate transition funds, giving large consulting firms like PwC the opportunity to develop decarbonization strategies and handhold smaller players in the transition process. He mentioned how PwC is collaborating with one such company in India.

Mr. Singh delved deeper into how companies are showing interest in ESG investments, but their concerns around the viability of such investments continue to grow. While a good amount of research is being done to build business models that can integrate ESG and ensure steady returns, convincing small companies to actively invest in ESG is going to remain a challenge. Moreover, the climate-tech space is still being figured out, with companies asking whether climate technology involves just the monitoring or tracking of emissions or does it actually go beyond and bring about tangible changes. What they are really trying to figure out is how their efforts will optimize the decarbonization process and what exactly their role would be. Mr. Singh noted how some companies are making attempts to achieve net-zero, but there is still a large percentage of entities that are either not interested or lack the resources to adopt such strategies.

Even the startup ecosystem in the ESG space is immature. Being involved in PwC's startup ecosystem, Mr. Singh has had the opportunity to interact with budding entrepreneurs and new companies. At one such interaction, he recalled, the startups showed little interest in what he had to say, because they were given a very clear message by previous speakers: if you know your startup can succeed, there is no need to focus on anything else. This was a sticky spot for Mr. Singh, having known what their mindset was, advising them to invest in uncharted territory such as ESG would prove to be irrelevant. What he really wanted to convey was that investing in sustainability practices would create high value for the company and that in today's climate-conscious world, investors would notice this value, which would ultimately benefit the company. Unfortunately, these startups are not ready to develop a value-creation model for their businesses. They are strongly inclined to stick to the model they have built as a product, which will guarantee financial returns and make their venture a success. According to Mr. Singh, for them, designing funds in a manner that they become more sustainable, which in turn could allow them to access more capital, is not a priority. The preference for conventional investment routes is still high among small companies and startups for the sole reason that their investors are not asking for it.

According to Mr. Singh, the topic of climate finance and how developing countries can access it has been widely discussed even before COP28. He observed that there is a struggle to define what climate finance means in reality. He gave the example of the Green Climate Fund (GCF), which was supposed to be replenished with US$ 100

billion every year from 2015 onward. Although the commitment was met this year, the monetary flows into the GCF have not been consistent. Mr. Singh questioned exactly how the categorization of the US$ 100 billion into the GCF should be done. Coming back to COP28, Mr. Singh noted the progress being made on the Loss & Damage Fund, which is highly beneficial for developing countries. The initiative by the UAE to establish a fund worth US$ 30 billion, which will function as an investment platform to drive private capital towards climate investments, and on improving access to climate finance in emerging markets, with a particular focus on the Global South. Other funds, such as the Least Developed Countries Fund (LDCF) and the Climate Change Fund, have also seen a few million dollars worth of commitments. However, the larger question remains as to how these funds will flow to the target beneficiaries.

An interesting aspect of this situation, as pointed out by Mr. Singh, is that these funds are providing loans to low-income countries, which are already struggling with an enormous burden of debt. Given the poor economic state of these countries, it makes little sense for them to access these funds while being indebted to those setting up these funds. Furthermore, the rate of interest riding on these loans can go as high as 18%. This level of rate of return is at par with the lending rates of commercial financial institutions. As a result, the movement toward "just transition" is unable to achieve the kind of success it is expected to achieve. Several developing countries have questioned the rationale behind this approach and are now suggesting the release of these funds in the form of grants and concessions. This has also re-ignited the debate on the principle of Common But Differentiated Responsibilities (CBDR), which calls for the equitable distribution of responsibilities and commitments in the fight against climate change. While countries have tried to abide by the CBDR and the principle was also incorporated into the Paris Agreement, the onus still lies on the developed economies, as they still have unhindered access to advanced technologies. India and other developing countries are seeking access to these technologies at concessional prices. Mr. Singh opined that even if developed nations take meaningful action, how much of the funds India and other developing economies can access still remains a question.

Upon being asked by Prof. Sugathan to provide an example of a technology that India can obtain at a concessional rate, Mr. Singh referred to nuclear technology, which India was able to obtain in 2000. It was only 2013-14 that a real partnership emerged between the US and India for employing nuclear energy for electricity generation. At the same time, there are certain developed countries who are grouped together at the top and control access to these technologies. Several of these groups are led by the US. One dimension that is emerging out of this scenario on nuclear energy is the potential of nuclear fusion in addressing climate change issues, and how it can be utilized to accelerate the transition to a net-zero world. Even though nuclear is not exactly an example of climate tech, it needs to be considered as an alternative source of clean energy.

Similarly, Mr. Singh noted, carbon capture and storage (CCUS) pilot projects have been initiated in India. The key, however, is to scale up CCUS solutions commercially, as these have met with success in the developed world. Mr. Singh also talked about another carbon removal project that involved the direct capture, mineralization, and storage of carbon under Iceland. The project was an expensive one, with carbon credits getting sold for more than US$ 600 per ton, bought by the likes of Microsoft and other large companies. This price was indicative of the fact that the demand for high-quality, removal-based offsets in the market, but not many are available. There are some projects in the US that are trying to replicate this model, but the access to the direct capture mineralization technology used in Iceland is still limited. There are also many other examples of advancements in clean technology, such as those made in hydrogen, that have been made in other developed countries, but access to those is also nonexistent as of now.

Mr. Singh said that in the US, Exxon, with whom PwC is partnering, has developed a rich body of research on bioenergy sources, such as algae and

bio-algae. A significant number of oil & gas companies in the US and even in India are establishing a "new energies" department within their organization. This department will be dedicated to exploring various low-carbon options and how the company can diversify into these areas. Advanced research & development activities are being done to understand how these options can be utilized by several oil & gas companies.

Mr. Singh responded by saying that many of the issues that fall within the ambit of the SDGs are not looked at broadly but are tackled at a micro level. He cited the example of a housing finance company issuing a social bond for affordable housing. The government defines which class of people can access these bonds, thus creating assets for that particular section of the society. Alluding to an example given by Prof. Flammer, he spoke about social impact bonds, where there is a funding entity that pays for the success of a project, while another entity, such as an investor, takes on the initial risk. Healthcare is one area where such methods have been applied to raise capital. These investments are not exactly targeted toward poverty reduction. They are seen as specific interventions that work on a "pay-for-success" model. The funding agency for such projects could be the government or a development institution, which is interested in creating impact but is not willing to take the initial risk. These agencies would provide the necessary capital to de-risk the project later on, with a rider that the project should create an impact and that impact should be tested by a third party. Once the third-party evaluation confirms that an impact has taken place, the funds will be released by the concerned agency.

According to Mr. Singh, such models are being increasingly utilized in the development space to finance key interventions to power innovation or address particular issues. Community-benefitting ventures, such as community-based solar parks, financed by sustainable bonds, which have elements of both green and social bonds, are also being issued by the private sector. New instruments, such as climate resilience or climate transition bonds, are also gaining traction in the corporate world. Mr. Singh recounted his stint with Tata Trust, when the organization was attempting to devise climate-resilience bonds that can address resilience in agriculture, working with certain kinds of farmers. As is evident, companies are utilizing novel instruments to deliver specific socioeconomic benefits, treating poverty as a multidimensional issue.

Talking about the corporate social responsibility (CSR) angle, Mr. Singh observed how India has made CSR mandatory for the corporate sector since 2013 and how this law has pushed companies to evolve from a tick-mark approach to looking at CSR as a strategic instrument to build reputational value and drive social value creation at the same time. Companies are now asking the following questions:

1. How should we design our CSR strategy?
2. Where should we invest?
3. What problems can I address as a corporate that will bring us in the larger light of the community, which can then enable us to expand our operations?

The idea behind these questions is to develop a rapport with the community and produce tangible outcomes that can take the form of revenues. The Government of India has identified the areas that need intervention and corporate entities are being incentivized to invest in these areas.

Q&A Session:

Question 1: At present, firms are looking at CSR as a means of building their reputation. When will companies start looking at CSR as more than a corporate strategy and fund actions to solve real environmental problems, such as life underwater?

Mr. Manpreet Singh: We did a study on where CSR funds are being channeled and identified three major areas - education, healthcare, and environment. Having said that, life underwater is not exactly defined as an eligible activity under the Companies Act. A company will invest in life underwater issues if it provides it with any kind of leverage. Corporate psychology should also be understood here. A corporate entity will direct its CSR activities toward projects that benefit the community. As directed by the Companies Act, a company must identify and prioritize the needs of the community in its immediate area of operation and contribute to raising the socioeconomic condition of that region. From a CSR perspective, companies might fund larger interventions, such as marine conservation, but their core focus will be to work for communities that they can access or those that are impacted by their operations, which is the essence of corporate social responsibility.

Question 2: Startups are resource-constrained firms and need to generate revenue for their investors. How can startups balance the dual objectives of ESG and firm profitability, without getting penalized by investors?

Mr. Manpreet Singh: The startups need to also evolve sustainable products or sustainable services. I think that's where the dual outcome of creating something that is impactful for the society comes in and the capital comes in for those projects as well. Currently, however, startups are making products that are unlikely to have any positive social impact and be profitable for the company. Investors will invest in the profitability of a new company and are therefore not much interested in whether the company invests in ESG or not. For them, ESG investments are additional costs that reduce the firm's profits, which kills their interest. On the other hand, startups creating sustainable products that can have a positive impact on the ecosystem are much needed in this space. How can investors profit from sustainable products and services? That's the question that must be answered.

Prof. Flammer: I have had these conversations about startups that have a sustainable business model or those that are making sustainable products for the end market. There are many examples of startups focusing on invasive species and making materials out of these organisms. Investors need to start asking questions that are not just about the return on investment but also about what the social or environmental impact of these startups are. This also turns the eye to us (academicians and researchers) as well as educators, if we think about training the next generation of investors. We should teach them to ask questions not just about their investment returns but also on how they can integrate environmental and social aspects into investment decisions. But, definitely, there are venture capitalists that are especially focused on startups that are following a sustainable business model, and, as you said before, they have products and services that are sustainable by themselves. Therefore, they have a business model that makes money.

Question 3: Recently, an oil & gas major from the West changed its website and its logo to green and yellow. Does the budget for such marketing activities fall under the companies' 2% CSR funding or does it fall under its marketing budget?

Mr. Singh: Frankly, it doesn't come out of the 2% budget ever because the 2% budget is being monitored. It's being audited as well now. Even though it usually doesn't, it sometimes can in certain cases. But then, it has to be clearly connected to how it benefits the larger population or the target population that's addressed through that particular project or program. This is because now the rule clearly defines that CSR activities

can't happen in isolation; they have to happen in a project or a program form. Moreover, these projects or programs have to be multi-year undertakings and not one-off events, which means that they ideally should not be funded through the 2% CSR allocation. Whether the claims of the company on it becoming green are correct or not is hard to determine. It is possible that the organization has come up with a branding strategy, if it has a new product, which it is focusing on or wants to transition to. I'm not sure if they're using the same product and are now rebranding, which could also be a strategy. I mean, I can't say that it's a bad strategy, but it should be backed up with some sort of evidence. Why are they realizing that they're actually selling a green product? Because that has been the case with many companies. Although they've been selling a green product, they never realized that they were actually selling a green product. Now, they want to rebrand and create the right kind of messaging that should go into the market about their products.

Closing Remarks:

Prof. Sugathan closed the session by thanking the panelists, Prof. Caroline Flammer and Mr. Manpreet Singh, and the participants for actively contributing to the discussion on a topic that holds the key in facilitating the transition to a net-zero future. He expressed his heartfelt appreciation to the engaging conversation driven by the panelists' unique perspectives on sustainable finance and investments. While Prof. Flammer talked from the standpoint of an academician who is deeply involved in researching the different aspects of climate change and its socioeconomic impact, Mr. Singh helped the audience understand how the corporate sector is viewing ESG investments and what kind of social value creation corporate climate action can attain in the future. Theory and practice need to complement each other in the domain of corporate sustainability. Climate-related financial risks and the role different stakeholders play in driving climate action need more research to build new models of development and make the SDGs a reality.

Panel Discussion II: Policy Design for Sustainability

Panellists:

Prof. Namrata Chindarkar
IIMA

Dr Prasad Modak
Managing Director,
Environmental Management Centre Pvt Ltd. and
Director,
Ekonnect Knowledge Foundation

Shri Amit Sinha
General Manager, Sustainable Finance Group,
Department of Regulation, Reserve Bank of India

Moderator:

Prof. Anish Sugathan
IIMA

Prof. Anish Sugathan:

The core issue that we are talking about is sustainable policy design. There are policies at multiple levels. In general, we have a theory around policy design which involves conceptual frameworks. However, when we pick up a particular policy design theory and go to a practitioner, they have a completely different perspective about it. Policy practitioners talk about implementation issues: institutional capacity to actually execute it on ground level. They also highlight all the past policy failures that have taken place. I would like to know about this gap between policy designing and policy implementation. What are the core elements of translation from theory to practise?

Dr. Prasad Modak:

Often, when I develop policies, I see majorly four compartments. When we look at a policy statement/dossier, a company would explain why it exists and what it is. It is important for outsiders to understand why a company exists and what its purpose is. Secondly, I analyse the unconditional commitment of a company towards a particular cause, i.e., its mission. The third block that I focus upon is to understand a company's aspirations and what it is that it strives to achieve. The fourth block is the most important, which is the execution part. The execution of a policy tells us how we are going to get the end results successfully. It also helps us to understand the 'how' part of policy implementation on the ground. If I get a policy statement of such a

kind with these four different compartments, I as a stakeholder would understand the intent, the commitment and the aspirations of an organisation.

Governments are also making certain changes in their policy frameworks. These days we see many sustainability goals, sustainability roadmaps, and sustainability policy principles in government booklets. In contrast, corporations had to move faster because they got connected to the global markets and global materiality flows as compared to the government bodies. Since the corporates work and interact on multiple levels, they really have to think about expressing their policies on sustainability. In fact, you would rarely see a National Policy on Sustainability because it has to be there in the country's Constitution. There is no need for a separate sustainability policy when it comes to the governments. The government, however, has to express the ethos on sustainability in all the missions that it undertakes.

Prof. Anish Sugathan:

What are some of the major new leading ideas that you see in academic literature and research that should be taken into consideration by prominent policymakers?

Prof. Namrata Chindarkar:

To begin with, one should be clear about the definition of the particular problem they have to deal with. This helps in getting a concrete statement of purpose. There are two major frameworks. Firstly, it is an interaction between social inclusion, growth, and governance. When we talk about ESG, we cannot ignore the interaction of these factors, be it renewable energy, clean cooking technology, air pollution, or a particular socio-environmental policy. We have to realise that there might be equity implications, gender implications, etc. In recent years, an increasing amount of attention is being given to energy justice and energy access. This close-knit interaction is one framework.

Another framework in academic literature is understanding climate change as a super wicked problem, and there are three very clear aspects to it. Firstly, it is time critical. Secondly, there is no central authority to manage it and the actors seeking to rectify it are also the ones causing it. This leads to serious negotiation problems at a policy level. Most problems in all the COPs are also negotiation problems. These aspects of climate change make us rethink how we shape policy tools as well. Financial regulations, direct environment regulations for various industries like power plants, steel manufacturers, etc., are some solutions of putting caps on environment degradation. But, there is also this idea that, lets move away from framework of dealing with every environment and sustainability problem as a problem of commons. What does the problem of commons do? It mostly comes down to negotiation type of solutions. Somebody has to give up something in order for someone else to gain, and that has failed. A lot of policy tools based on the idea of commons have failed. What has worked instead is the approach of path dependency, identifying what has and hasn't been effective historically.

Prof. Anish Sugathan:

Given the Indian context and the different priorities of people, access to energy is something we have not yet figured out. When we talk about policy making at the top management level, how sensitive are we when we compare the per capita consumption of developing countries as compared to the developed countries? How do we understand this problem of sustainability versus life at stake?

Shri Amit Sinha:

Firstly, do no significant harm on your own part. Policymakers are faced with various dilemmas while trying to develop a policy. It is usually very difficult to arrive at a common minimum situation; if we do it, we realise it is definitely going to impact the other side. You would always have one set of people getting impacted by that. Therefore, the policy-making, particularly in the Indian context, is

extremely tough. Although India, along with China, is one of the biggest emitters, if you see the total emissions, but the value of emissions per person are much lower. It is already a debate across the globe.

My personal take on this situation would be that we should always consider, as a developing economy, how much we should do for climate change since it would impact our economic development as well. If we decide to do something, the present generation will get affected. If we don't, the present as well as the future generation will get affected. The decision to arrive at a particular figure is very difficult.
Secondly, at the same time, you have to be mindful of what is going on in the international forum. Policy plans made by senior officials in intenational body meetings also might not get implemented due to various challenges in the Indian context. Such challenges exist in developed countries as well, but they would be of a different nature.

Closing Remarks:

The panel discussion focused on discussions that highlighted how policies should be designed for sustainable development to foster more effectively in India. Policies should ensure that abstract theory is transformed into concrete practice for evident results on ground level.

How to put policy principles into practice is a task at hand for all policymakers in India. Since India is a developing country with immense diversity and population three major factors should be taken into account and understood:

1. Intent
2. Commitment
3. Aspirations

Sustainability policy principles are being laid by both the central and state governments to tackle the increasing environmental issues, such as waste management, GHG emissions, poor water supply, etc., with stricter rules. India's current umbrella policy for sustainability is gaining prominence amongst Indian policy leaders. Leadership is critical for policy implementation to get support for policy monitoring and policy regulations systematically.

However, policy leaders are also starting to realise the practical side of climate change. They are starting to understand that doing no significant harm is a more practical and realistic approach than having idealistic expectations and visions about climate mitigation and sustainable development. Since industrialization, production, manufacturing, and pollution have been integral to economic growth, it is important to recognize that development is an inclusive concept, with economic development being a crucial part of it.

Additionally, assessing the success of a policy at the ground level is very difficult due to multiple issues, such as the unavailability or unreliability of data from both companies and the government. Although energy transition policies are gaining strong support from government officials, many companies are still hesitant to accept certain environment-based policies because they often affect corporate profits. Therefore, driving sustainability policies is not easy for the government alone without the support and cooperation of corporate houses.

Panel Discussion III:
Role of Innovative Startups in Driving Sustainability

Panellists:

Ms. Bhagyashree Bhansali
Founder & CEO
The Disposal Company

Mr. Bhaktha Keshavachar
Co-Founder & CEO
Chara Technologies

Mr. Satish Ramchandani
Co-Founder
Updapt-an ESG Tech Co.

Moderators:

Mr. Vipul Patel
IIMA Ventures

Prof. Rama Mohana Turaga
IIMA

The discussion began with Vipul Patel inviting the three panellists to share their entrepreneurial journeys and provide insights into the products and solutions they are developing.

Mr. Satish Ramchandani:

We started the firm 'Updapt' in 2019. I have four co-founders and we all come from backgrounds of ESG, sustainability, corporate governance and consulting. We noticed some gaps in the market and hence, built a solution around it. Firstly, there is a huge ESG data gap that we all are well aware of. The data around ESG performances of the businesses itself is spread across various operations and verticals. This is one area wherein we noticed that businesses were spending a lot of time on administrative tasks rather than focusing on designing and implementing their de-carbonisation strategies. Secondly, the entire process of GHG (greenhouse gas) emissions accounting and carbon accounting requires many man-hours, hiring consultants, and paying substantial fees. We thought this area could be digitised for improvement. Thirdly, businesses often spend more time on administrative tasks rather than managing the needs of various stakeholders. Lastly, we focus on addressing the question of how to achieve net-zero emissions efficiently and effectively by developing various solutions. We have built a SaaS tool that will help businesses to digitise the entire ESG lifecycle. It would manage the data and undertake carbon footprint accounting digitally, and record the data in alignment with the global standards like Business Responsibility and Sustainability Reporting

(BRSR), etc. We have also built peer benchmarking and forecasting abilities to help businesses gauge where they stand in terms of emissions basis their business operations. We know that 80% of emissions are Scope 3, which are outside the direct control of organisations and their value chain partners. To address this, we have built a value chain partner assessment to help businesses digitise ESG data management, monitoring, and other elements of their supply chain partners, like dealers and distributors.

Ms. Bhagyashree Bhansali:

As the CEO of 'The Disposal Company,' I'd like to start by emphasizing the scale of the global plastic waste crisis: in 2023, we produced 2.12 billion tons, a figure expected to rise to 3.14 billion tons by 2050. Secondly, microplastic is something which is present all around us and is unfortunately in our diets today. 'The Disposal Company' started off as a plastic neutrality platform. We provide solutions to brands by raising consciousness that there is a "polluters pay" principle, which exists for a serious reason. It states that if you are polluting the environment, you need to take care of offsetting and also reducing your footprint. We first started doing plastic foot-printing for brands, where we helped them understand two important metrics. First, the types of plastics that they are putting out in the environment and second, the quantities of plastic they are putting out based on their actual sales/operations. There are two main types of plastics released into the environment in large quantities: high-value plastic waste and low-value plastic waste. Examples of high value plastic waste include PET, while plastics like LDPE are low value plastic waste. High value plastic waste refers to plastics that recyclers are willing to recycle easily, while low-value plastic waste refers to plastics that recyclers are less keen to recycle. Low-value plastic waste is also a significant source of GHG emissions. Our company focuses on low-value plastic waste and aims to democratize the uptake of plastic waste management by companies. We have created an ecosystem where brands first determine their plastic footprint in both numeric and qualitative terms. The same type of plastic is then collected from landfills in its post-consumer format for recovery. This plastic is recovered by rag pickers and waste aggregators, for whom we provide improved working conditions (in terms of providing them the right gear and timely health checkups) and additional pay. Once collected, the plastic waste is sent to our partner recyclers, and we also operate several recycling units across the country.

Mr. Bhaktha Keshavachar:

As the CEO of 'Chara Technologies', let me start of by highlighting that there is a large energy transition happening globally. We are moving away from hydrocarbons to electrons for our source of energy storage, and consumption, which is good for the future of our planet. However, when this transition happens, there are a lot of opportunities created as well as problems involved. One of them is the motor, the future engine. The motors that are used today are broadly divided into two types: induction motors, such as fans, compressors, etc., which are about 60%-70% efficient. It means that one-third of the energy that is put in is wasted as heat. It is clearly not sustainable, both economically and environmentally. There is a huge opportunity in motors because 60% of the electrical energy we produce on this planet is consumed by motors. There are efficient motors today, called BLDC and motors, which are primarily used in electrical vehicles (EVs). From the smallest e-bike to Nexon and Tesla, the whole spectrum has a common motor architecture. They use NdFeb/Neodymium-iron-boron magnets which have rare earths. Rare earths are used in motors, batteries, electronics, defence equipment, etc., and are critical for our future. However, there are a few problems with rare earths. They are expensive and are difficult to mine and earth.

At Chara, we are reinventing motors. We are building motors and controllers without the use of rare earths for many applications, such as electric vehicles, industrial applications, etc. We do deep technology-oriented research. Even Tesla, BMW, and ZF have announced rare earth-free power trains. We believe that the environmental effect of

mining and extracting is not at all a sustainable method. It leads to an extremely high carbon footprint.

Prof. Rama Mohana Turaga:

I'm no expert in entrepreneurship, but over the last few years, I have had conversations with entrepreneurs, particularly in the sustainability space. There is one question which I think cuts across all three of you. Raising capital in the sustainability sector often reveals a gap between conventional financing models and the unique needs of enterprises like yours. One of the major issues I think is to convince conventional financial institutions to fund you. How have you navigated this challenge, and what role do you think regulatory frameworks could play in bridging this gap?

Mr. Satish Ramchandani:

I think it is the same analogy as to how you convince a customer to buy a product that no one has bought before. Our first customer who bought our product was Cipla, a very large pharmaceutical company. With zero clients and nothing to prove, we found ourselves sitting with the Chief Sustainability Officer (CSO) of that company. There were a few key elements that really worked in our favour from a pitching standpoint. Firstly, convincing them about the domain knowledge that we come with, related backgrounds and the work that we have done in the past. In case, the work done in the past is limited, the presence of a strong team could make all the difference. Secondly, to secure investment/clients, the conviction you bring to the table is extremely crucial since the person judging you is most probably going to put a bet on you. Thirdly, assessing what the client needs is important. This is what we did with Cipla. We built something that they really needed, and while we were building a product for them, we parallelly standardized to a SaaS product by understanding how a large complex business really works. Lastly, authenticity in the conversation plays a major role while trying to secure investment. I think, it's really important that the client/investor likes you because if he doesn't like you and doesn't trust you, it then becomes difficult to crack a deal even if you have a good product. Hence, the authenticity matters.

I know the question had to be answered from an investor's angle, but these are some elements from a client acquisition point of view which I think are really important and can also be applied while pitching.

Ms. Bhagyashree Bhansali:

I completely agree with all the points that Satish made, but here's where I differ. While we are sustainability enablers, there is a difference between CSR and sustainability. Sustainability is no longer just a trend or a charitable endeavour; it's a critical business strategy that directly benefits the bottom line.

Initially, the conversations with both the clients as well as the investors are difficult. In our case, we started in October 2020, and made our first sale in July 2021 when were able to turn the client, make them understand the solution and then get them to agree to putting real money into the solution.

Today, be it an entrepreneur purchasing our services or be it an investor investing in us, will understand that this is a real business solution or a business investment that they are making. The money that a sustainable organisation today puts in is to reduce its further costs in the future. Any business that takes up the sustainability initiative, or goes carbon neutral or plastic neutral, is making its own operations more efficient. For example, by creating a decarbonisation plant, a business is actually employing its resources in the right direction and reducing emissions, which could save the business from the ever-increasing costs and environmental fines. By switching to a LED bulb, we save electricity as well as costs. These are real world implications in financial terms.

Any investor with even a little bit of vision knows that sustainability is the real direction to move forward. For example, traditionally in India, a lot of people tried to save money from GST by coming up

with weird schemes. Today, we can't run away from it. If we are paying any sort of tax, be it GST or any other tax, it is for our own development. It comes back to us. It is the same case with sustainability. Today, we are investing in understanding our impacts so that they can be reduced. Coming back to the question, the conversations with the have changed drastically. In the case of 'The Disposal Company', there has been strategic investments made by a lot of D2C investors, so that we can help them make their entire D2C portfolio sustainable. One of the SDGs is 'partnerships for good', and such sort of partnerships signal where we are headed.

Another important point to highlight is that building a sustainability solution is not enough. We also need to have a sustainable business model. I say this as an entrepreneur in this industry and also as a marwadi, "A business needs to make money at the end of the day, and that is only way to generate money in the long run".

Mr. Bhaktha Keshavachar:

When we try to pitch to investors the deep tech sustainability space, we usually pray. That is the only thing we can do. We talk to a lot of people and pray. It takes a long time, typically 4-5 years to generate any meaningful revenue. A completely non-technical trick that we had used and have learnt from a lot of other entrepreneurs is the art of storytelling. One should know how to weave a story. I have seen a lot of celebrated entrepreneurs pitch and they do not even talk about finance. They instead tell a story. We have to learn to convey what is on our mind. After speaking to 75 investors, we stopped keeping count because it got frustrating for us. Eventually, we found the money and now we have more support for 'Chara Technologies'.

The story that we told was about these large transitions that happen every decade. I have seen 3 transitions. The first one was in the 90s, the information revolution. The second one which is peculiar to India, was the digitisation of the Indian economy. This was when I had started the company, Ezetap. The biggest transition, however, that the world will ever see is the energy transition. It will beat the information revolution, I believe. What we present to the investor is the chance to grab huge opportunities and solve huge problems.

Earlier, whenever we pitched, we didn't have any graphs that going high exponentially to show, and sometimes, we didn't even know what we were doing. The space of deep tech sustainability is like that. Our pitching has changed now. After two rounds of funding, we are more into regular growths, cost of unit economics, etc.

Lastly, a little bit of luck also plays a role when it comes to externalities that we can't control.

Q&A Session:

Question 1: What are your thoughts on disclosing the recycling efforts of a company you've collaborated with, and how might this impact consumer behaviour? For instance, if a potato chips company recycles the same amount of plastic that it produces, should this information be shared with customers? While it could enhance the company's brand, could it also lead to consumers becoming more complacent about their waste management, knowing that the company is already recycling? As a consumer, would I not become less concerned about the sustainability of the plastic packaging if I know the company is taking responsibility for recycling?

Ms. Bhagyashree Bhansali: This question has two parts. First, who handles the recycling? At 'The Disposal Company,' we take responsibility for recycling an equivalent amount of the same type of plastic that our partner company releases into the environment. We work with multiple recyclers across the country, and we also operate our own units. The plastic is recovered from landfills or water bodies, recycled, and then converted into granules, which are used as raw materials by other industries.

Regarding the second part of the question, we ensure that customers are well informed about the company's plastic neutrality and its waste management efforts. We communicate this through various channels, including social media, and it's also mentioned on the product packaging, but in no way is this communication meant for consumers to become complacent. There is no alternative to conscious consumerism. While the company manages its environmental footprint, consumers should also be mindful of which companies are making genuine efforts towards plastic neutrality or environmental sustainability and which are not.

As a consumer, it's important to make an effort to determine whether the brand you're engaging with aligns with your values, particularly in terms of sustainability. For example, one of our partner companies is a plastic-positive brand, meaning they recover 10% more plastic than their annual footprint. When you make a purchase on their website, there's an option at checkout to voluntarily contribute towards offsetting additional plastic. This product, known as the 'TDC Offsets,' was developed by 'The Disposal Company.' The purpose of this additional 'tax' is to remind consumers, even at the final stage of purchase, that plastic neutrality and waste management are core values of the company. This also helps reinforce the concept of plastic neutrality into the mind of the consumer. Our goal as sustainability enablers is to consistently reinforce the sustainability value system that we believe in.

Ultimately, real change will come from conscious consumerism. We must reduce our consumption wherever possible and strive to make better, more informed choices.

Question 2: Following up on the previous question, what do you think about the willingness to pay for sustainability beyond a voluntary price increase? Have any of 'The Disposal Company's' plastic-neutral clients ever charged a higher price to account for the cost of externalities, and then passed that cost on to consumers?

Ms. Bhagyashree Bhansali: Yes. When we conduct plastic foot-printing, it also involves costing. There's an additional cost per kilogram that the brand will bear. We create a visual representation for them to understand how much the cost increase per product unit will be. Typically, it's less than a rupee per unit. While the company could pass this cost onto the customer, we haven't seen that happen yet. In India's highly competitive market, where the number of brands is constantly rising, price wars are intensifying. At the same time, awareness of sustainability is also growing, driven by either the founder's or investor's compliance

perspective. To answer your question, brands generally do not increase product prices due to the ongoing price wars in the economy. However, with certain tools, a company or brand can request that customers pay a voluntary tax.

Mr. Satish Ramchandani: To add to this, businesses exist for profit. A business is a profit-making entity. Consumers won't pay a higher price unless they see value for their money. Social good is important, but it can be achieved through donations and programs dedicated to various causes. What's crucial for decarbonizing the economy is a combination of technology, policies, and behavioural change. This behavioural change is necessary not just for consumers but also for businesses. Over time, we'll see government policies evolve. The cost of capital for certain processes will become more expensive if they're not environmentally friendly, and vice versa. There must be a Profit & Loss (P&L) impact. For example, once electric vehicles are priced the same as or lower than petrol vehicles, we'll all opt for electric. Additionally, government intervention and policies will play a significant role.

Question 3: Over time, could there be any potential negative effect on consumers when responsible companies constantly remind them to be more conscious, even though they are already being responsible by choosing to be their clients? Could this lead consumers to shift to irresponsible companies because those companies don't keep reminding them and potentially make them feel bad?

Ms. Bhagyashree Bhansali: What you're saying does make sense. In an ideal world, we would want communication about conscious consumerism to be widespread. But realistically, people don't change their habits unless it comes from within or has a direct impact on their lives. Our efforts aim to show people that there are more sustainable choices they can make. This helps consumers understand the impact of their actions and sets industry standards.

If people at least start engaging in discussions about the minimum standards they and companies should meet regarding sustainability or the environment in general, we can move toward a point where businesses are very careful about every activity they undertake. Coupled with conscious consumerism, this is the best we can hope for our planet. If we stop communicating about responsible consumerism, where do you see the world going? If people and businesses continue their purchasing habits as they have for the past decade, where do you see the world going? This is a challenge we're all facing, and we're all trying to improve the situation.

Closing Remarks:

Prof. Rama Mohana Turaga added, "The logic behind the introduction of EPR (Extended Producer Responsibility) is that consumers cannot be expected to have the awareness or make decisions that will drive the market towards sustainable products. It's easier to regulate producers instead. Additionally, consumers face significant information asymmetries. A consumer may be very conscious about buying a green product, but figuring that out involves costs. There are numerous challenges in identifying a green product that aligns with your preferences and purchasing it. This is where policies come into play. Beyond the voluntary market, which could help such firms succeed, there is also a need for regulation. For example, making it mandatory for companies to use a certain proportion of their inputs from recycled plastic. There are mandatory government instruments in place as well. The current debate centers on the extent to which markets can drive change through voluntary actions versus the need for coercive regulations by the government."

Research Paper Presentations

Theme: Investor Behaviour

Do firms respond to commitments on climate change? Impact of COP21 on investment intensity

Pramendra Singh Tank
IIMA

In the Paris Climate Agreement (COP21), countries pledged to restrict global warming to 1.5-2.0 degrees Celsius by reducing greenhouse gas (GHG) emissions. We examine whether firms respond to the commitments made by countries in the period following the agreement. Using cross-country data with 68,471 firm-year observations and a policy experiment approach, we find that manufacturing firms domiciled in countries with ex-ante higher GHG emissions per capita reduce their capital expenditure intensity after COP21.

We also find that the market valuations of such firms are substantially depressed compared to those firms located in countries with low GHG emissions per capita. The findings suggest that climate policy uncertainty and transition risks have likely contributed to the heterogeneous firm response across countries. The insights from our study contribute to a relatively novel literature that assesses the impact of the global climate agreement on capital expenditure intensity and market valuation.

Impact of climate transition risk on cost of financing of Indian Firms

Shikha Khurana
IIMA

Environmental, social, and governance (ESG) has gained prominence in economics, finance, public policy, strategy, and international business (IB) literature. Even as the debate continues whether firms should be accountable for their negative externalities towards the stakeholders or whether the firms should focus on shareholders' wealth maximization, there is a stream of literature that studies the impact of environmental risks on firms' profitability and sustainability, including the cost of raising finance. Many regulated financial entities and institutional lenders in Europe and North America have incorporated climate risk policies in their lending and investment decisions. There has been a growing emphasis on the role of the financial sector in the reallocation of capital towards the decarbonization of economies, even as the countries have adopted different timelines to achieve net zero carbon emissions. While transition risk is expected to impact firms operating in geographies where the environmental criteria have been tightened, the situation remains fluid in the developing countries that have delayed the commissioning of regulations. Most studies are focussed on firms in the US and European region, with limited attention to emerging market firms.

This paper adds to the existing conversation on the impact of climate transition risk on emerging market firms' performance and the strategies that firms adopt to mitigate the effects of climate risk. I examine whether there is an indirect impact of regulation in developed countries on the cost of debt financing for domestic firms in emerging markets and how domestic firms in emerging markets adopt environmental

policies to mitigate the transition risk of climate change ahead of their home country regulations. The theoretical foundation draws on the institutional logic literature. When large number of foreign financial institutions refrain from financing certain businesses or sectors perceived to accentuate the climate risk, the affected firms will adopt the environmental norms and policies as long as they are complementary and not in conflict with the policies and standards of their home country. Adopting the criteria will allow the firms to signal their commitment to bringing down carbon exposure, even when there is no regulation mandating the same, thereby allowing them access to low-cost foreign currency funds and gaining a competitive advantage. The econometric study examines cost of financing for firms in India post the Paris Agreement. Using the difference in difference approach, I empirically show that there is a shift in the financing patterns for firms in carbon intensive sector post 2016, with interest costs increasing for the firms raising finance from certain geographies.

Theme: Corporate Governance

Exploring the Relationship Between Environmental, Social, and Governance (ESG) and Corporate Financial Performance (CFP): A Systematic Review of Literature

Priyanka Aggarwal
Delhi Technological University

Environmental, Social, and Governance (ESG) practices have gained significant importance due to rising concerns over climate change, ethical business practices, and corporate social responsibilities. The adoption of ESG practices is also increasingly viewed as a crucial catalyst for corporate financial performance (CFP).

However, the relationship between ESG and CFP is still not clear. This study aims to bridge this research gap by providing a holistic understanding of the ESG and CFP relationship. The research endeavours to utilise a three-step methodology encompassing PRISMA guidelines; Theory, Context, Characteristics, and Methodology (TCCM) framework, followed by a moderator-mediator model proposed by authors. The authors reviewed 157 research articles published between 2014 and 2022.

Worry about making employees happy not environment: Evidence from India

Priya Dhawan
IIT Delhi

As firms' commitment towards corporate social responsibility increases, the idiosyncratic component of stock return volatility (IVOL) decreases. This relation is driven by firms that display stronger commitment towards social-and-community, and employee-welfare. Spending on environment-related issues does not influence IVOL. No further reduction in IVOL is observed for firms that spend more than the minimum mandated amount prescribed by the law.

Firms that spend more on employee-welfare have less volatile operating cash flow and higher firm valuation. For a given level of corporate spending on employee-welfare schemes, IVOL decreases (increases) in the presence of institutional investors and foreign (domestic) promoters. Negative (positive) effect of employee-related CSR expenditure on idiosyncratic volatility (firm valuation) is robust in both financial crisis and pandemic era.

Estimating Carbon Emission Intensity of Energy-Intensive Firms: Firm-Level Analysis of the Changing Corporate Governance

Dr Aishwarya Kant Gupta
IIFT Delhi

The quality of the corporate governance is a broadly a function of the legislative architecture domestically and, in the present world with GVCs linkages, it is also the function of the international legislative regime. Or put in other words a function of the dominant market with the growing market. There has been a delta calling for a radical shift from efficiency and competitiveness to effectiveness in production. All future projects in countries exporting to the EU market would be governed by the CBAM directives (regulations). The quality of governance during the liberalisation period in India (1991 to 2019) and later is largely linked to the COVID-19 pandemic and secondly to the SDGs and the related nationally determined goals (NDCs).

The CBAM regulation would require importers of certain energy-intensive goods to pay a levy in respect of their imports that corresponds to the price of emissions allowances under the EU Emissions Trading System ("EU-ETS"). Thus, pushing the EU's NDC commitment is forced upon its trading partners who would want to be the exporters; thus, it introduces a green production process like that which has been adopted in the EU - as part of it NDCs for meeting the SDGs of net zero carbon target by 2050. The Indian firms operating in sectors like iron, steel and aluminium would need to adopt such legislative-driven changes in the production process of their exports to the EU.

The European Union (EU) has notified to the World Trade Organisation (WTO) about its national measure, which is also a strategic intention to institute a comprehensive 'Carbon Border Adjustment Mechanism' to address the “green-house-gasses” (GHGs) emission and the related “climate-change” challenges. The mechanism is so designed to address the challenges posed by carbon emissions and therefore it has the potential to target the energy intensive sectors – both at the primary level and secondary levels. The EU regulation known as CBAM has the potential for heralding a pivotal moment in international trade regulation. The EU's proposed framework particularly targets eight industries with substantial energy demands, including Iron and steel, aluminium, cement, electricity, fertiliser, and hydrogen. Notably, the potential implications of carbon taxation resonate distinctly within the Indian economic landscape, with certain sectors like iron and steel as well as aluminium, standing out due to their pronounced export orientation.

The objective of this paper is to compute carbon emission intensity across the firms belonging to two sectors namely iron and steel, and aluminium for the period 2000 to 2022. The primary objective is quantifying the price and cost impacts at the macro and micro levels. The preliminary finding suggests a decline in the average carbon emission intensity of firms across both industries as they have declined during the period of study.

Theme: Climate Change and Macroeconomics

An Investigation of Carbon Taxes and Terms of Trade in A Large Macroeconometric Model

Amit Kara
IMF

Carbon taxes are likely to play a key role in meeting greenhouse gas emission targets that are consistent with the Paris Agreement. In this article, we assess the macroeconomic effects of a carbon tax on the global economy, paying particular attention to the terms-of-trade implications for importers and exporters of fossil fuels. We use a modified version of the National Institute's Global Econometric Model, NiGEM. In the stylized scenarios, all countries and regions impose a permanent and uniform carbon tax immediately.

Our simulations show that demand for fossil fuels falls substantially in response to the tax, global (pre-tax) prices of fossil fuels decline, and the tax can raise substantial revenue for the government. The overall impact on GDP growth and inflation in each country depends on the fossil fuel intensity of output, the net losses/gains in terms of trade and the macroeconomic policy reaction.

Impact of Catastrophic Events on the Financial Health of Scheduled Commercial Banks in India

Shounak Chakraborty
IIMA

Natural disasters, which include climatological, meteorological, and hydrological disasters, are becoming increasingly frequent, with higher economic and human costs. Over the last decade, South Asia accounts for nearly 40% of the total lives impacted by such disasters worldwide. Using a panel of 190 large scale natural disasters recorded in India between 2005 and 2022 and the annual financial reports of 38 domestic Scheduled Commercial Banks over the same period, including public and private sector banks, this paper tries to analyze the impact of natural disasters on the financial performance of the banks and the factors that may impact their solvency, profitability, and credit health after such events. The analysis includes bank ratios that represent different aspects of operational capability, capital adequacy and business development capacity to account for the diversity of management decision making across banks. A dynamic GMM approach revealed that natural disasters had significant impact on the Net NPAs and Return on Assets but did not affect the solvency or capital adequacy of the bank. There was also evidence of a lagged impact of these disasters a year after their occurrence. The research findings contribute to the literature by shining light on the physical risk from catastrophic climate events that pose a systemic risk to the stability of the financial system. Stress in the financial system may further exacerbate disruptions to the productive capacity of real economy by limiting the availability of credit or access to financial instruments, which can further set back the pace of recovery. Large banks with greater diversification across geographies and economic sectors, as well as access to a greater number of deposits, bear lesser risk compared to smaller banks with a higher degree of geographical concentration. But increasing financial interconnectedness means that any risk can be transmitted across the system. Current regulations related to macro prudential policy and financial stability do not account for the risk from natural disasters. The research aimed to explore if the regulatory authorities need to widen their approach to prevent the next big financial crisis.

Theme: Green Finance

Quantile volatility spillovers between European carbon futures and sectoral stock markets: Implications for portfolio management

Ravi Raushan Jha
IIT Roorkee

This paper examines the volatility spillovers and tail dependence between the European carbon futures market and sectoral stock markets, viewed as an economic activities barometer for different sectors of an economy. In particular, we examine the static, dynamic, and tail-risk spillovers between the EUA futures market and sectoral stock indices under different market conditions, using a quantile-VAR-based spillover index model. Our results show that the spillovers between the markets are around 64% under mean and median conditions and around 87% under extreme conditions. The findings indicate that the spillover effects in the tails are significantly higher than that under mean and median conditions. Furthermore, the spillover effects are heterogeneous under different market conditions. The spillover effects between the markets are time-variant and event-dependent, and are relatively less volatile in the tails. Noticeably, the time-varying spillover effects between the markets are different in the extremely higher and lower quantiles, indicating evidence of asymmetry and tail dependency. Finally, the results from the portfolio strategies suggest that the effective hedging strategy is to hold short positions in the EUA futures market.

Carbon market as an emerging financial market: A review and research agenda

Charu Vadhava
IIT Roorkee

With significant attention by the investor community in the past decade, carbon markets have emerged as a new subject of study originating from the larger universe of climate finance. Despite great effort, academic understanding of the carbon market as an emerging financial market is limited and dispersed. The study aims to consolidate knowledge, explore current dynamics, identify primary research streams, and suggest a road map for future research in this field. To better understand this enigmatic topic and enhance scientific research, we provide a bibliometric literature review (BLR) on the carbon market as an emerging financial market. To the best of our knowledge, this is the first BLR on this topic accompanied with content analysis. Combining the results of bibliometric and content analysis, we identified six major themes: Risk and volatility, market efficiency, news effects, determinants of carbon prices, carbon market integration with conventional financial markets, and herding behaviour. This article provides researchers, policymakers, regulators, and academicians with insights into carbon price dynamics and helps to make better investment decisions. Furthermore, the report also makes numerous intriguing suggestions for future research directions to promote the continued growth of investment in carbon allowances as an investment vehicle.

Does it Pay to Go Green? Exploring the Relationship Between ESG, Carbon Emissions, and Cost of Capital: Evidence from India

Karishma Salian
IIT Bombay

This study examines the influence of Environmental, Social, and Governance Disclosure Scores (ESGD) on the Expected Cost of Capital (COC) in the Indian industries, with a specific focus on Environment-Sensitive Industries (SI) and Non-Sensitive Industries (NSI). Analysing the ESG performance of Indian companies from 2014 to 2022, we employ diverse equity risk premium methodologies, including the Historical Premium, Survey, and Country Risk Premium approaches.

Additionally, for cost of debt analysis, data is sourced from Refinitiv. To mitigate potential biases, we utilise the Heckman model and address endogeneity concerns using the Generalised Method of Moments (GMM) and Two-Stage Least Squares (2SLS) techniques. Our findings unveil a significant positive relationship between ESG disclosure scores and COC in SI, highlighting the impact of stringent environmental regulations and perceived risks on ESG-related costs.
Conversely, NSI exhibits a substantial negative correlation. Furthermore, our study explores the link between carbon disclosure and the COC, revealing a positive association. In contrast, the analysis of the relationship between the cost of debt and ESG disclosure yields insignificant results. A more granular examination of ESG components exposes a negative influence of governance scores on COC, a positive effect of environmental scores, and no substantial relationship with social scores.
Notably, this study pioneers the empirical investigation of the varied impact of ESG disclosure scores and carbon emissions on COC in India's SI, NSI, and overall industries. It augments existing knowledge and offers crucial insights for both managers and policymakers seeking to bolster ESG practices through enhanced corporate governance mechanisms in the emerging countries.

Theme: ESG and Related Regulatory Mechanisms

Does CEO Characteristics Impact Environmental, Social, And Governance (ESG): An Empirical Analysis?

Nitin Sharma
IIMA

This article examines the influence of CEO characteristics, CEO tenure, and the CEO's parental status (having a daughter or a son), as well as the nation of origin of the organisation, on the Environmental, Social, and Governance (ESG) performance of companies using the lens of the Upper Echelon theory. This study investigates the relationship between revenue and ESG performance by utilising a sample of publicly traded businesses listed in the BSE 100 and OEX index using a panel regression methodology to analyse data from 2012 to 2022.

The findings suggest a statistically significant and positive relationship between the company's revenue and its ESG score. Moreover, there is a relationship between the CEO's term (tenure) and the CEO's paternal status. CEOs with longer tenures within the same firm tend to weaken the relationship between revenue and ESG scores.

Additionally, CEOs working in Indian companies exhibit a lesser influence on ESG scores, potentially attributable to the delayed integration of ESG practices within Indian enterprises. The research indicates that the presence of a daughter does not have a significant impact on the relationship between ESG scores and CEOs' level of concern for social and environmental matters.

However, it reveals that having a son amplifies this relationship, implying that CEOs with male children may exhibit a heightened degree of focus toward these concerns. This study makes a valuable contribution to the existing body of literature by offering empirical evidence about the impact of CEO characteristics on ESG performance.

Regional Variation in Liability of Privateness, Interorganizational Networks, and 'Make-or-Buy' of CSR

Bibek Bhattacharya
IIM Bangalore

Governance (make-or-buy) choices represent an important stream of inquiry in strategy research. However, prior research has predominantly focused on how these choices are made in relation to market activities and have paid negligible attention to nonmarket governance choices. Moreover, most research in this field has relied on efficiency-based perspectives and largely ignored the role of legitimacy. Accordingly, in this paper, I investigate how firms' location in financial centers shapes the make-or-buy decision as applies to the implementation of corporate social responsibility (CSR) projects and explicitly incorporate legitimacy-based arguments in my theorizing. Integrating prior research on liability of privateness and CSR-related institutional logics, I theorize that firms located in financial centers are subject to greater liability of privateness and are therefore less likely to undertake CSR activities themselves. Further, given that outsourcing and other interorganizational partnerships are often fraught with agency problems, I also draw on the structural holes theory of network advantage to argue that firms that are more structurally constrained in their interfirm networks would be less able to mitigate these outsourcing-related agency issues and therefore the negative association between location in financial centers and the likelihood of direct CSR implementation would be weaker for such firms. I test these predictions using CSR project data from India.

Who Bears the Cost of Green Policies?: An Examination of Green Office Rental Contracts, and Mandatory ESG Disclosure Regulation in India

Prof. Prashant Das
IIMA

Financial prudence compels businesses to invest in green projects when the marginal benefits - pecuniary or non pecuniary- exceed the marginal costs. Regulations create incentives for green initiatives when other financial benefits are not clearly apparent. However, regulations that are also equitable aim to distribute costs and benefits evenly across stakeholders. We analyze over 17,000 commercial office rental contracts in India to examine the effect of a newly introduced regulation that forces large firms to publish ESG disclosure. For several firms, renting green offices is a feasible ESG activity to disclose. We find that rents in green-labeled assets and those with health certification command significant premiums between 7-14%. However, the green rents increased much faster over time compared to non-green counterparts and the propensity to rent green varies significantly across industry segments. Suppliers (landlords) benefitted from the regulation by disproportionately increasing rental rates and contract complexity. Existing tenants and foreign firms ended

up paying higher rental prices while other firms redirected their green commitment away from green buildings. An overall reduction in green rentals is the opposite of what the ESG disclosure regulations tried to achieve.

Theme: Sustainable Value Creation

A Tale of Green-Driven and Profit-Seeking Mutual Fund Managers

Lagan Jindal
IIT Roorkee

Using an international sample of 59 green funds from 01 January 2010 to 31 December 2022, the study compares the managerial skills of green and conventional funds. Additionally, the study separately assesses how fund size and fund age affect the managerial abilities of these two funds. Given the investigation period, it does appear that the fund's green characteristic does impact managerial skills since green fund managers show better managerial skills than their conventional counterparts.

Since small mutual funds are mainly responsible for the positive stock-selection skills in the green and conventional fund managers, fund size does appear to impact managerial skills. When we control the results for the fund age effect, we conclude that young and green funds seem to possess better managerial skills than their older and conventional counterparts.

The Dynamic Impact of Financial Technology and Energy Consumption on Environmental Sustainability

Dr Mohd Afjal
Vellore Institute of Technology

This research investigates the dynamic interplay between financial technology, information and communication technology, energy consumption, and economic growth on environmental sustainability within Emerging and Growth-Leading Economies (EAGLEs) from 2005 to 2020. Utilizing advanced econometric techniques, such as Fully Modified Least Squares (FMOLS) and Vector Autoregressive Error Correction Model (VECM), the investigation scrutinizes the hypothesized relationships among these variables. Panel unit root tests were deployed to assess stationarity, while panel least squares methodology was employed to determine the presence of co-integration among the variables under study. The analysis reveals that internet usage, GDP, and renewable energy consumption exhibit a notable influence in diminishing CO2 emissions within EAGLE economies. Additionally, the findings substantiate the existence of long-term causality originating from these variables and impacting CO2 emissions. Conversely, the role of ATM networks in CO2 emissions remains ambiguous, implying that financial technology's influence on environmental sustainability is inconclusive. Consequently, the research posits that environmental sustainability in EAGLE economies is chiefly determined by factors such as internet usage, economic expansion, and renewable energy consumption, with financial technology demonstrating no discernable impact. In light of these findings, the study advocates for the reevaluation and adaptation of existing policies and strategies to account for shifting climatic conditions. By doing so, decision-makers can better align their efforts with the pursuit of environmental sustainability in the context of rapidly evolving economies.

ESG and Asset Values: A Conceptual Framework

Prof. Joshy Jacob
IIMA

The decade has witnessed increasing interest among investors in the risk-return impact of environmental, social, and governance (ESG) factors on firm value. It is assumed, for example, that the worsening climate change and concerns regarding widening income inequality will impose physical and regulatory risks with implications for the valuation of firms. However, a systematic understanding of the mechanisms through which ESG factors could impact firm valuation in financial markets is lacking. In this study, as part of a larger research project on the interaction of ESG factors and finance, we intend to systematically explore how ESG factors enter into standard finance models of asset pricing. In this process, we hope to understand the potential and limitations of financial markets to address complex challenges that society faces.

Poster Presentations

The Burden of Financed Emissions: Integrating Sustainability Goals within Business Strategy for Banking Sector

Rajarshi Mukherjee
IIMA

Abstract: The banks and financial service institutions across the world are at the crossroads of an inflection in the ecosystem. The Paris Agreement of 2015 has put forward a unique challenge to the banking and financial service sector. The agreement requires countries to reduce carbon emissions by forty three percent by 2030 and achieve net zero emissions by 2050. Although banks and the financial services industries have some control over Scope 1 and Scope 2 emissions, it has become a challenge to control the Scope 3 financed emissions, which form a large part of the banks emission liability. Our paper provides a conceptual model for segregation of banks and financial institutions based on capability and maturity to disclose financed emissions. The paper also provides a framework using either a top-down or bottom-up approach to create a strategy to improve the preparedness for handling financed emissions. The conceptual model can be relevant to the academics and practitioners to identify the strategic moves to comply with emission regulations of the future.

Sustainable Approach to Enhance Vaccine Cold Chain Systems in India with the use of Solar Technology – A Systematic Review

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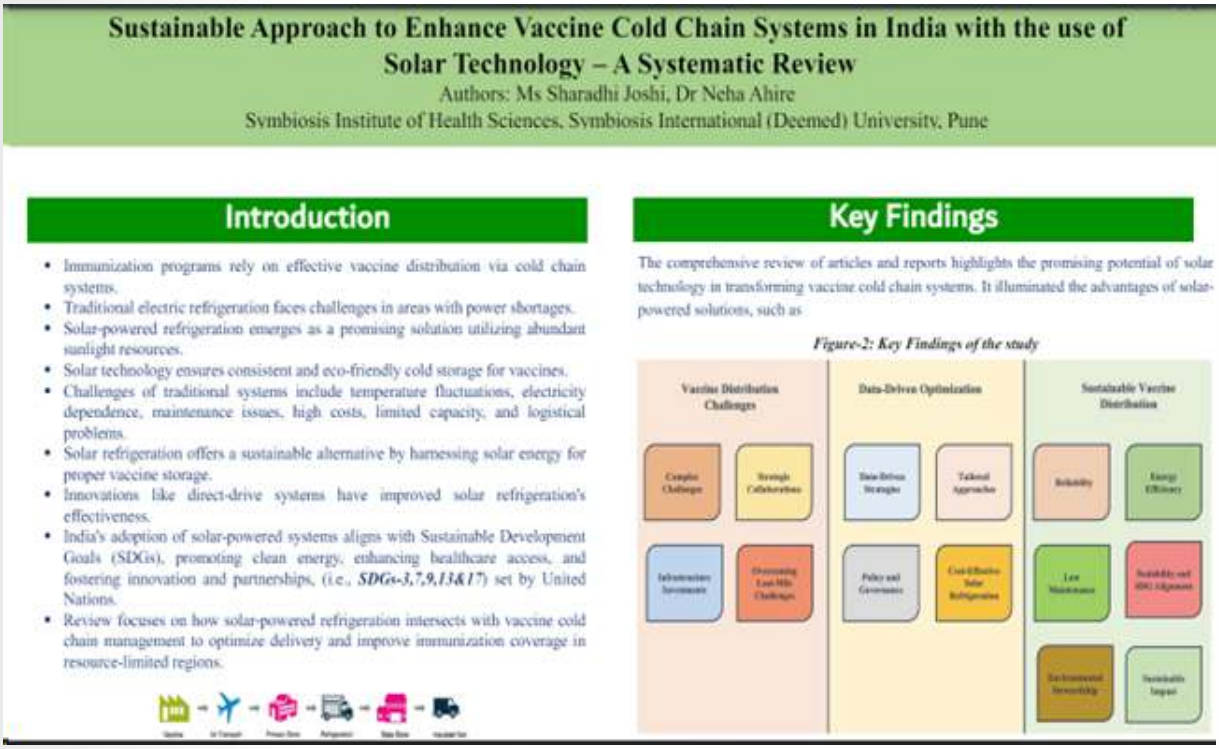

Sustainable Approach to Enhance Vaccine Cold Chain Systems in India with the use of Solar Technology – A Systematic Review

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Introduction

- Immunization programs rely on effective vaccine distribution via cold chain systems.
- Traditional electric refrigeration faces challenges in areas with power shortages.
- Solar-powered refrigeration emerges as a promising solution utilizing abundant sunlight resources.
- Solar technology ensures consistent and eco-friendly cold storage for vaccines.
- Challenges of traditional systems include temperature fluctuations, electricity dependence, maintenance issues, high costs, limited capacity, and logistical problems.
- Solar refrigeration offers a sustainable alternative by harnessing solar energy for proper vaccine storage.
- Innovations like direct-drive systems have improved solar refrigeration's effectiveness.
- India's adoption of solar-powered systems aligns with Sustainable Development Goals (SDGs), promoting clean energy, enhancing healthcare access, and fostering innovation and partnerships, (i.e., ***SDGs-3,7,9,13&17***) set by United Nations.
- Review focuses on how solar-powered refrigeration intersects with vaccine cold chain management to optimize delivery and improve immunization coverage in resource-limited regions.

Key Findings

The comprehensive review of articles and reports highlights the promising potential of solar technology in transforming vaccine cold chain systems. It illuminated the advantages of solar-powered solutions, such as

Figure-2: Key Findings of the study

Aim and Objectives

Aim: To study the use of solar technology in creating the sustainable approach towards vaccine cold chain systems in India.

Objectives:

Objectives of this study are precisely

•To assess how vaccination coverage and the reliability of the cold chain, particularly in India, are affected by solar-powered cold chain systems.

•To compare the deployment of solar-powered cold chain systems to established vaccination cold chain systems to see whether it is economically feasible.

•To identify barriers to implementing, maintaining, and repairing solar-powered vaccine cold chain systems.

Methodology

- Study is based on comprehensive review of Literature from databases such as: Scopus, Pubmed and Research Gate.
- Reviewed academic publications, reports, and databases on solar-enhanced vaccine cold chains in India.
- PRISMA guidelines for systematic study identification and evaluation were followed.
- Keywords were defined - *Immunization Programmes, India, Vaccine cold chain systems, Solar energy, Sustainability, Economic viability.*
- Analyzed data systematically from selected studies.
- Sample size: 28 studies meeting inclusion criteria.
- Employed databases, government sites (NHM, Ministry of Health), WHO, UNICEF for data collection from May to June 2023.

Limited Innovation	• Encourage vaccine R&D

Conclusion

Solar-powered solutions have significantly improved vaccine availability and healthcare services in remote areas of India, aligning with multiple Sustainable Development Goals (SDGs).

They ensure good health and well-being by making vaccines accessible, prevent diseases, and promote clean energy use, reducing reliance on fossil fuels. These solutions represent an innovative approach to address healthcare infrastructure challenges and contribute to climate action by lowering greenhouse gas emissions.

The sustainability of solar-powered vaccine cold chain systems is evident in their energy efficiency, cost-effectiveness, and reliability in off-grid regions, minimizing disruptions in vaccine supply.

These systems not only empower local communities but also align with global efforts towards sustainability and resilience in healthcare infrastructure. Overall, the review emphasized the potential of solar-powered systems to significantly improve vaccine distribution, enhance healthcare access, and contribute to sustainability across economic, environmental, and public health domains.

Key References

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- Universal Immunization Program.
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Attitude of Handicraft Exporters towards Sustainability of Goods & Services Tax

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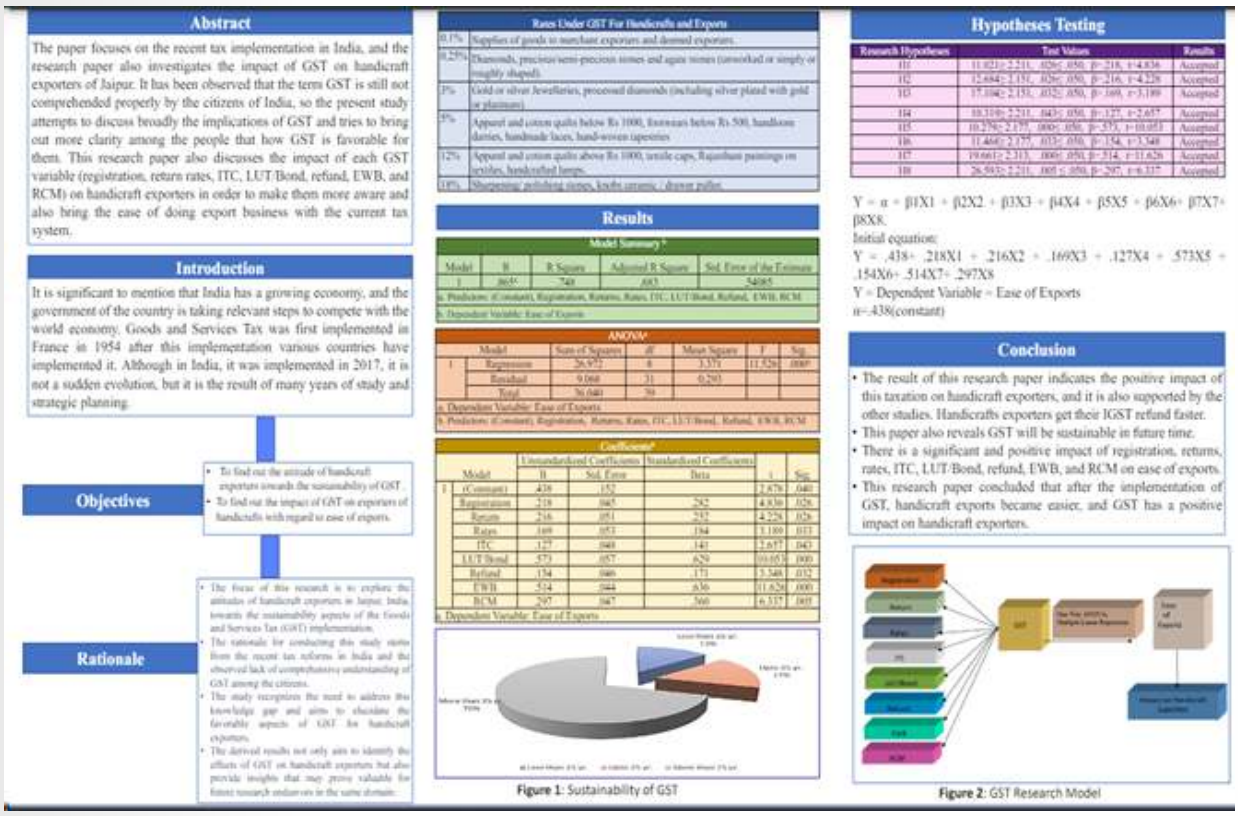

Figure 1: Sustainability of GST

Figure 2: GST Research Model

Assessing the Efficacy of Independent Directors in India's Family Owned Business Model: Is Whistle-blowers' Protection the Solution?

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Abstract: This article unfolds the current dispute between the controlling equity holders and the independent directors, where the controlling equity holders are able to suppress them, and therefore, the basic purpose of having them remains unfulfilled. The mass resignation, as currently happening, by independent directors during or after the failure of governance questions their efficacy. This article serves a comprehensive view and detailed analysis of the issues faced by independent directors in India's family-owned model of corporate governance which either forces them to owe allegiance towards the controlling shareholders or chooses to exit from the company to detach themselves from future liabilities or unlawful future removals. Therefore, the present study urges for a protection to the protectors of corporate governance in the form of 'whistleblower protection' which may enable them to raise their objective voice outside the board and disallow them to resign as a matter of last resort.

Concluding Remarks

IRCC-2023 offered an insightful and comprehensive examination of various aspects of Environmental, Social, and Governance (ESG). The conference delved deeply into the scope, objectives, and limitations of ESG, providing a thorough understanding for attendees. Key topics such as green investment, green bonds, and social-impact bonds were explored, highlighting their significance in promoting sustainable financial practices. The discussions extended to green taxonomy and the development of green managerial skills, emphasising the need for a specialised skill set in managing sustainable initiatives.

A major focal point of discussion during the conference was the role of corporate entities in driving sustainability at the local, national, and international level. Within the sphere of the discussion on corporate responsibility, the conference also shed light on Life Cycle Assessment (LCA) and its importance in evaluating the environmental impacts of products and processes. In addressing climate change, the sessions on carbon emissions and carbon markets were particularly relevant, providing insights into current challenges and market mechanisms aimed at reducing carbon footprints.

Sustainability issues were thoroughly examined, alongside the critical role of policy making in driving environmental and social change. The integration of social work within the ESG framework was also discussed, highlighting its impact on community development and social welfare.

A significant component of the conference was the diverse array of papers that explored various dimensions of ESG. Researchers presented unique findings on a wide spectrum of topics ranging from green finance to sustainable value creation to the changing nature of the study of economics in the face of climate change. These studies provided both quantitative and qualitative insights on sustainable business practices and also attempted to showcase real-world applications and the challenges faced in implementing responsible capital initiatives.

Overall, the conference successfully brought together diverse perspectives, fostering a deeper understanding of responsible capital and its potential to drive sustainable development.

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India Responsible Capital Conference (IRCC - 2023)

08th & 09th December 2023 (Friday & Saturday)

Website ▶ https://conference.iima.ac.in/ircc2023/