CENTRE FOR EXCELLENCE IN SUSTAINABLE DEVELOPMENT

# SUSTAINABILITY HORIZON

Quarterly Newsletter of
Centre for Excellence in Sustainable Development, Goa Institute of Management
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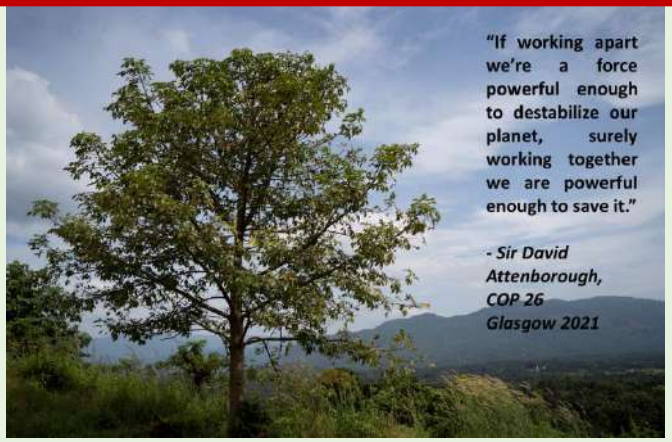


## EDITORIAL

**Prof. Arpita Amarnani**
Chair and Associate Professor
Centre for Excellence in Sustainable Development,
Goa Institute of Management

Climate change is affecting every country on earth. It is disrupting economies and human lives as never before. The Covid-19 pandemic is testimonial to this fact and has reiterated the immediate need for climate action. According to the net zero tracker, as of March 2022, a total of 131 countries have taken action towards achieving net-zero [1]. These actions range from discussions to declarations to developing a policy document to having a law for climate action. With these countries at various stages of achieving net-zero, one of the major challenge is going to be that of finance. These goals are achievable only if there is sufficient quantum of funding available. Recognizing this challenge several initiatives have been taken to bring various financial players together to ease the flow of funds for climate action. The Net-Zero asset managers initiatives, the UN convened Net-Zero Asset Owner Alliance, Net-Zero Banking Alliance and the new Glasgow Financial Alliance to Net Zero are a few examples of the same. As with all financial frameworks, the critical aspect here is going to be that of distribution and sharing of risks and returns. Innovative products will be needed to manage these challenges, especially because we are talking of large quantum of funds.

With this backdrop, the sixth issue of 'Sustainability Horizon' looks at various aspects of Sustainable Finance. The issue begins with understanding few trends in research in the field of sustainable finance followed by articles from faculty members at GIM. One of these articles highlights the risk and return challenges in sustainable finance while considering the various climate action funds. The next article explores financial sustainability of waste management activity in India. The article from our CFO focusses on measurement of environmental damage in financial terms and posits that the end user should be made accountable for the same. The article, 'Tech to boost the Social Dimension of ESG: UPI and PIX – Distant Brothers that are boosting financial inclusion in India and Brazil' provides an international perspective comparing digital payment systems in India and Brazil and explores the impact of these on financial inclusion. Both these developing economies have seen a surge in digital payments during the covid pandemic supported by innovative mechanisms led by regulators.

It is with great pleasure and pride that I present before you four articles by our students. These articles cover a range of perspectives on sustainable finance. While 'Sustainable Finance' tries to understand financial aspects of sustainability in general, 'The Catastrophe Bonds' specifically looks at these special types of bonds to understand how they help insurance sector manage its risk. The other two articles, 'Key Providers of Sustainable Finance' and 'Transition from Present to Future of Investments' investigate the existing sustainable finance ecosystem and understand the future aspects of the same.

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# TRENDS IN SUSTAINABILITY RESEARCH

**Prof. Avik Sinha**
Associate Professor
General Management & Economics,
Goa Institute of Management

Following the COP26 Summit, the role of finance is being recognized as a major driver for achieving sustainable development. However, its policy impact is still unknown. While the $2tn Infrastructure Drive proposed by President Joe Biden reflects the concern of the USA government to boost the renewable energy-driven green recovery path, it is criticized by the United States Senate Committee on Energy and Natural Resources, as the adverse financial implications of this proposed expenditure are still unknown [1]. Moreover, the developed economies failed to deliver to the promised climate finance to the developing and underdeveloped nations. Even though the developed countries have now promised to deliver on the US$100 billion goal by 2023, the expectations are less in the backdrop of the present global chaos [2].

Under such a scenario, the financialization channels utilized for the climatic protection might take a possible shape of the environmental colonialism, the cue of which can be taken from the Pollution Haven Hypothesis [3]. Strong domestic policy intervention might be necessary for the developing economies to utilize the climate finances, as it might be envisaged as a tool for neo-colonialism. This mechanism might pose a threat towards the attainment of the SDGs.

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# FINANCIAL SUSTAINABILITY IN WASTE MANAGEMEMENT

**Prof. Vithal Sukhathankar**
Associate Professor,
Goa Institute of Management

Under the Paris Agreement, the developed and developing economies have set specific targets for the transformation of the global economy. One such topic of concern for all developing countries, especially India, is dealing with the management of waste and the related sustainability. As per the Press Information Bureau (PIB), India generates 62 million tons of waste per year, which includes both recyclable and non-recyclable waste, with an annual growth rate of 4%. Raising the finance for the management for this waste is a great task. Shri Nitin Gadkari, Minister for Road Transport & Highways, has been addressing different aspects of clean and green environment, with an emphasis on the use of cheap and reusable resources. One issue that he is trying to address is "How to make plastic waste a reusable resource?"

It is evident that sustainable finance will be an important factor in mobilizing the necessary capital for waste management. As per a World Bank Report of 2021, East Asia and Pacific generate maximum non-biodegradable waste, which is an alarm bell. Another area of concern is that plastic constitutes 44% of the total waste worldwide [2].


Trends in global waste generation [2]

The Government of India (GoI) has lots of initiatives to manage the waste under the "SWACHH BHARAT" Abhiyan. GoI is promoting the use of single use plastics and plastic carry bags, etc. in road building. Around 1.6 tons of plastic has been used in the 270-kilometre-long Jammu Kashmir National highway. So far, 703 kms of National Highways have been constructed using such material. This initiative is ensuring a saving in the range of ₹ 26,000 - 60,000 per lane km [1].

Sustainable Finance will help ensure the right investments to meet environmental targets economically. As rightly quoted by World Bank "To make future economies more resilient, many countries will need systems that can build and retain more human and physical capital during the recovery – using policies that reflect and encourage the post-pandemic need for new types of jobs, businesses and governance systems" (World Bank, June 2020).

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# TECH TO BOOST THE SOCIAL DIMENSION OF ESG: UPI AND PIX – DISTANT BROTHERS THAT ARE BOOSTING FINANCIAL INCLUSION IN INDIA AND BRAZIL

**Cristiano Soccol de Farias**
Executive Director BRASFI (Brazilian Alliance for Sustainable Finance & Investment), Brazil

**Michel Moccelin Viccari**
Power BI Specialist, Brazil

The informal economy in Brazil represents 16.80% of the Brazilian GDP[1], with 13.7% of unemployment rate[2],. In India, it is estimated that around 15%-20% of Indian GDP is composed of the informal market[3], with 8% of unemployment rate. In addition, Brazil and India share a high portion of unbanked inhabitants. In Brazil[4], 15% of the population does not have access to bank services or similar[5], and in India, this number represents 20% of the society[6].

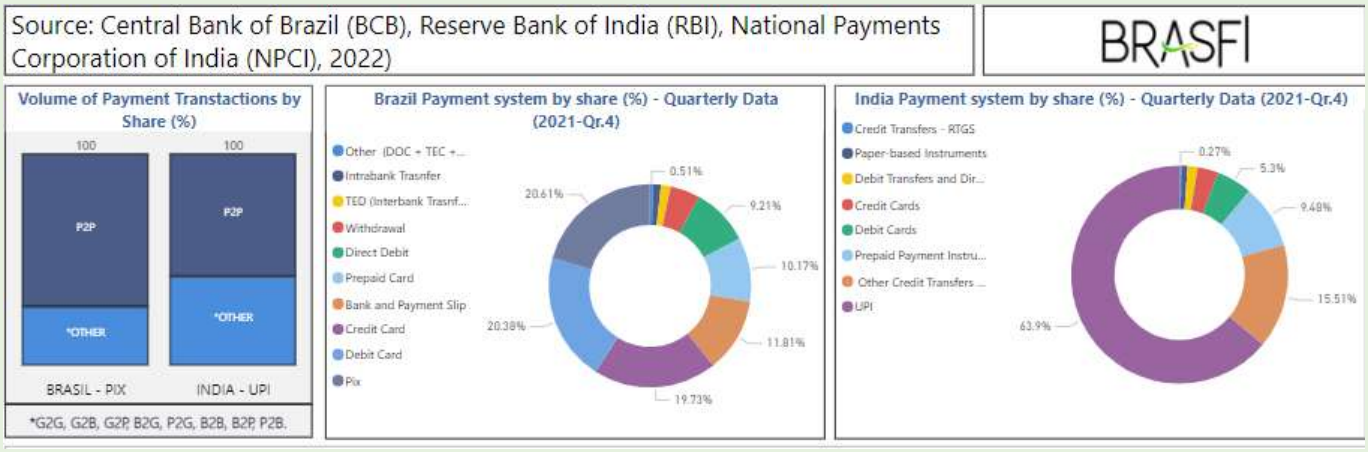
Innovation in financial mechanisms, led mainly by public regulators, has been generating an incredible and positive impact by including these portions of the population in the financial market. India has one of the most worldwide successful cases with UPI, and Brazil, inspired by this (and other) disruptive instant payment system, launched at the end of 2020 its own system, called PIX.

PIX is a system that enables individuals and companies to send and receive on-line (or few seconds) payment transfers at any day and time (24/7) [7]. For the user's identification, PIX uses an alias, which can be the consumer phone number, email address, tax number, or a random key. Every PIX alias is linked to a bank account, being portable within financial institutions. The PIX user's information is stored in an encrypted and protected database. Individuals can hold up to 5 PIX alias and companies up to 20 PIX aliases.

PIX early adoption is extraordinary. In around one year after PIX was launched, its volume of transactions is higher than credit or debit cards, and other traditional inter and intra bank transfer systems. A status that deserves attention is the fact that, despite the expressive rise of PIX, other payment systems did not suffer a substantial reduction in their transaction volume; indeed, some of them, like cards, have grown in the last months. This panorama may suggest that a relevant share of the population was included in the bank system due to the PIX.

Before PIX, to make an interbank transfer, it cost around US$ 2.00 per transaction. Today, with PIX, it is free of charge for people, and for business, it is significantly less expensive than before. In Brazil, the P2P transaction represents the vast majority of the transactions (72.40%), while in India, the distribution is more proportional, with P2P instant payments holding 58.00% of the country's payment system. The fact that India UPI is costless also for businesses may explain the higher adoption of transactions involving companies.

The PIX financial inclusion is remarkable. More than 45.6 million individuals had the chance to make their first payment by PIX (considering a horizon of 12 months)[8]. Furthermore, it directly impacted the low-income population, considering that the number of new users grew 131% between March and October 2021; at the same time, for the overall population, it advanced 52%.




*Interactive charts displaying the evolution of payment systems in Brazil and India (Refer note at end of the article)*

At the end of 2021, UPI represented 63.9% of India's payment system in terms of volume. PIX accounts for 20.61% of the Brazilian's payment system. Will the Brazilian PIX keep following the steps of his distant brother UPI and gets this size of the market? Let's see what comes next from these distant brothers. Could they become closer? Imagine sending and receiving online payments abroad, maybe India<->Brazil, instantly and free of charge. Imagine the size of this impact!

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**Note by Authors:** Clicking here or by scanning the adjacent QR code you can find interactive charts displaying the evolution of the payment systems in Brazil and parallels of PIX with UPI mentioned in this text. We hope that you enjoy it!

# FINANCE FOR SUSTAINABILITY

**Prof. Ashay Kadam**
Professor,
Goa Institute of Management

While humanity continues its search for innovative ways to adapt to climate change and to mitigate its impact, our climate journey is also bringing about the importance of financing these initiatives adequately, with innovative financing techniques where possible. The United Nations Environment Programme Climate strongly believes that "finance is critical to addressing climate change because large-scale investments are required to significantly reduce emissions, notably in sectors that emit large quantities of greenhouse gases.". Finance for sustainability could be from local, national or trans-national sources. Due to the inter-connectedness of the climate ecosystem the global agenda of net zero cannot be fulfilled by merely a small subset of environment friendly nations.

If all nations are to participate then the inequalities between countries have to be considered. These are not only in terms of their wealth and socio-economic development but also their vulnerability due to their geography, demographics and lack of political influence. Developed countries must fulfil their Paris accord commitments towards helping less wealthy and/or more vulnerable countries. Several international entities focus on managing the financing of climate initiatives. The Special Climate Change Fund (SCCF) and the Least Developed Countries Fund (LDCF) are both managed by the Global Environment Facility which has been active since 1994. The Adaptation Fund (AF) was set up after the Kyoto Protocol in 2001. The Green Climate Fund (GCF) was set up soon after COP 16, in 2010.

While climate change mitigation has been in the works for decades, the ongoing pandemic is recent. It has further accentuated the need for adequate climate finance. A developing country facing economic hardships as it emerges from the pandemic is even less likely to shift its budget priorities from the immediate post-pandemic short-term goals (such as reviving small businesses, rebuilding supply chains, fortifying the health infrastructure etc.) to long term infrastructure investments essential for climate change mitigation.

As for financial instruments useful in climate finance, the key issue is that of scale e.g. raising trillions of dollars for use in the forthcoming decade to build low carbon infrastructure. Fund-raising could be difficult because an individual project with high upfront capital outlay may repay only over long horizons and moreover the cost of capital has to be kept low.

Innovation beyond "classical" modes such as debt, equity, subsidized loans, project grants is largely in using or structuring the classical instruments in "innovative" ways (e.g. first loss guarantees, mezzanine funds, special purpose vehicles etc.). Often innovation may come down to just requiring fewer guarantees or a more appealing risk-sharing arrangement (especially between public and private financiers). More innovative instruments may address risks other than credit risk, such as policy risk, foreign exchange risk, technology application risk etc.

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# ACCOUNTING FOR ENVIRONMENTAL DAMAGE

**Ashish Marathe**
Chief Finance officer
Goa Institute of Management

**What gets measured, gets done. What gets measured in currency, definitely gets done!** One of the biggest flaws of the current approach to tackle environmental issues is that the monetary impact of the issues is not linked to an individual. Who exactly is causing environmental damage? Is it the Government, the mines or the factories? None of the above – it is caused by the consumer – effectively, you and me. But the cost of the damage is not accounted for at our end. The damage is being done today, but the cost will be incurred for several years to come, and we will look up to the Government to bear the cost at that point in time. The cost will in terms of income support, health support, and housing to millions of people who would have lost their houses, livelihood and health due to floods, droughts, fires, and pollution.

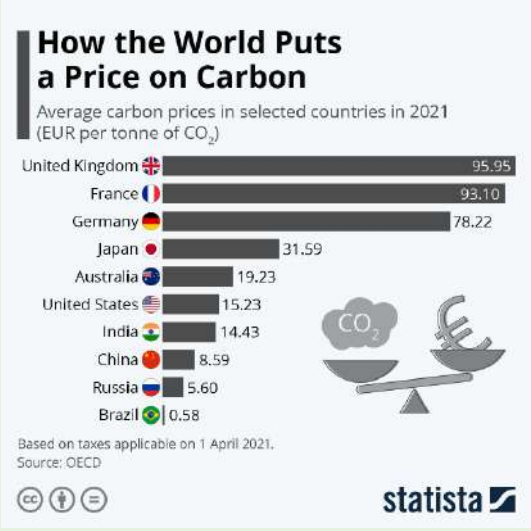
If a business buys a car, the accounting standards need us to charge depreciation in the books. The depreciation ensures that when we need to replace the car, a reserve is created to fund the same. Along the same lines, for damage done today, if the cost will be incurred in the future, we need an accounting standard that will ensure the Governments provide for the cost today and recognize a liability. If the world's governments do this, the monetary impact will be transparently visible.

The liability will have to be funded somehow, and the only way to do it is by introducing an Environment tax. Just like the way GST gets accumulated on a product through the value chain a product passes through, there needs to be an Environment tax that will get accumulated through the environment destruction chain that the product passes through. That is the point when the consumer will feel the pinch of the damage being done and hopefully will influence consumer behaviour.

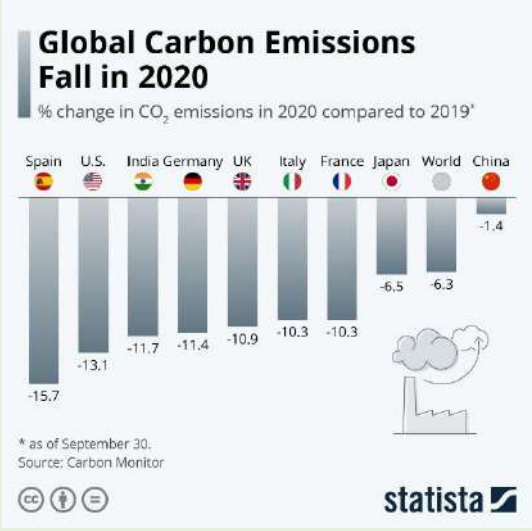
The Environment tax collected can be accumulated in an Environment Fund with the Government, which can be used to support the liability created as above. It can also be used to fund new age, cleaner and greener businesses so that apart from charging the customer for environmental damage, we could also create alternate products/ processes giving the consumer the choice of lesser damage to the environment.

The downside of this approach is: It will lead to inflation. But given the hidden cost, inflation will be inevitable whether or not this approach is followed. The choice is only between gradual inflation over a few years or sudden massive inflation that may hit us 5 or 10 years down the line.

A practical problem could be how to quantify the monetary impact on the environment caused by a product. This could be left to a team of scientists, environmentalists, economists, and accountants who could create an estimated monetary impact on the environment linked to each material unit so that the monetary impact of a product can be ascertained using the material mix of the product as the basis.




Source: https://www.statista.com/chart/17095/highest-carbon-taxes-in-the-world/




Source: https://www.statista.com/chart/23217/co2-emissions-annual-change-by-country/

# SUSTAINABLE FINANCE

**Pratyasha Pansari**
PGDM-BIFS, 2021-23

In the wake of the effects of climate change, an increased sense of responsibility to attenuate this problem lie in our hands. Sustainable Finance is a way through which we can mitigate the problem and provide a better life for Gen-Z. But, to achieve this, we need to have a better understanding.

## What is Sustainable Finance?

Sustainable Finance refers to investing in environmentally sustainable projects and considers the effects that a project is going to have on the environment.

## Why Sustainable Finance?

Sustainable Finance has a crucial role, as the financial sector holds enormous power in funding businesses, so if they consider the environmental, social, and governance (ESG) factors into consideration before investing in a company, it could bring a huge amount of awareness and development towards the issues of sustainability.
Keeping this in mind, The Companies Act,2013 introduced the first ESG disclosure requirements for companies in India. Further, in May 2021, the Securities Exchange Board of India implemented new sustainability requirements, mandating the top 1000 listed companies by market capitalization to submit an ESG report.

## Techniques for Sustainable Finance

1. Increasing general awareness of the Public: Increasing the awareness regarding green finance and sustainable development will encourage people to start environmentally viable businesses.
2. Sustainable Lending: Sustainable Lending means directing financial flows from the public and private to sustainable development priorities. The ESG considerations play a central role in such credit decisions.
3. Green Bonds: Green Bonds are instruments designed so that the money raised from investors is exclusively valuable for finance projects that have a positive environmental impact.

Sustainable Finance promotes transparency of risks related to ESG factors and tries to mitigate these through proper governance. Moreover, we can conclude that it is the need of the hour which ignored can have a drastic impact on the planet and our lifestyles.

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**Just for fun:** What do you call really tall expenses? ***Overhead!***
(funnymanfinance.com, Selected by Prathamesh Gadgil, GIM)

**Vaidehee Salkade**
PGDM-BIFS, 2020-22

# THE CATASTROPHE BONDS

Popularly known as cat bonds, insurers use these majorly to transfer the risk to investors. They are popular owing to the uncorrelated risk, like Tsunami or earthquake, to the business cycle, providing a good diversification. It is a high yield debt instrument specifically established to raise money for companies in the insurance industry. With the increasing adverse change in the climate, natural disasters are inevitable, and no insurance company wants to take the full responsibility of paying for the same. The catastrophe bonds act to spread the risk arising out of natural disasters. Investors can invest in these little pieces of insurance policy, and if something goes haywire, the insurance companies pull in the money from those investments.

If some natural disaster occurs, say a tornado is wiping off the west coast of America, the investors' money will be used for reconstruction and rehabilitation from that disaster. So, it is, in a way, profitable for the investors if the tornado does not make land. It acts like mortgage securitization wherein instead of buying a piece of mortgage, one buys a part of the insurance policy. Along with not betting on the disasters, one is also not guaranteed to lose out on all the money invested if the disaster occurs. For example, damages were worth USD 15 billion when Hurricane Katrina occurred. However, the damages did not happen to the properties that were insured. And hence, the government paid to rehabilitate and reconstruct those areas. There have been instances where these cat bonds have been issued. The Philippines was a part of an agreement with the World Bank, who issued the country Catastrophe Deferred Drawdown Option (CAT-DDO). The Philippines issued catastrophe bonds worth USD 300 million against typhoon protection. Japan, however, serves to be the most significant player in the cat bond market. Japan is the land of earthquakes and tsunamis and has cat bonds to the best of their advantage. Tokio Marine, in 2014, sponsored Kizuna Re II Ltd. Japan cat bond worth USD 25 million. Simultaneously, a Japan typhoon cat bond worth USD 100 million was issued by Sompo Japan and Nippon Koa. Zenkyoren was responsible for issuing a USD 300 million Nakama Re Ltd. quake bond and a Japan quake bond worth USD 375 million. In 2015, China sponsored a USD 50 million worth of cat bond for earthquake risks.

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# KEY PROVIDERS OF SUSTAINABLE FINANCE

**Arushi Sachdev**
PGDM-BIFS, 2021-23

Sustainable Finance involves taking ESG factors into the picture while making investment choices for society & environment. Due to strong financial and societal benefits, it has been attracting more and more investments. A report from the Inter-governmental Panel on Climate Change (IPCC), published in August 2021, warned that lack of action would result in irreversible damage like increased temperatures, rising sea levels, and Global Warming. The Public capital- Finance from governments, will alone not be sufficient in tackling this global problem. There will be a need for private funding from various sources. The key providers of Sustainable Finance are as follows:

1. **Corporates** are the major source of funding linked to climate, through their CSR activities as well as the multiple investments in various sectors like renewable energy etc.
2. **Banks** have an integral role to play in providing sustainable finance. They are focusing more on lending towards projects which are sustainable and provide climate-friendly solutions.
3. **International Financial institutions** can support in increasing the green investments by channeling funds towards sustainable development through green bonds and have the power to influence global financial frameworks.
4. **International organizations** such as the United Nations (UN), the Organization for Economic Co-operation and Development (OECD) and the G20 provide limited finance but help in coordinate sources of funding through their international networks.
5. **Climate funds** including the Green Climate Fund, Adaptation Fund, Global Environment Facility and Climate Investment Funds, are all multilateral funds for the projects related to adaptation and mitigation of climate change. They get funding from various other individual countries.
6. **National Governments** determine the amount of funds reserved for green investments. They also help in supporting and regulating national funds for climate change and environment.
7. **Central Bank and regulatory authorities** can direct and encourage the financial sector towards ethical investments through their policies and regulations.
8. **Various stock exchanges** across the globe often promote green investments. E.g. the Luxembourg Green Exchange (LGX) which is a part of the Luxembourg stock exchange is working as a devoted platform for green, ethical and sustainable securities.

Creating a healthier and more equitable future for all will take the combined efforts of non-profit organizations, governments as well as the private sector.

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# TRANSITION FROM PRESENT TO FUTURE OF INVESTMENT

**Archit Parwal**
PGDM, 2021-23

Addressing global challenges such as climate change requires considerable funding. It is imperative to develop innovative sources of financing to suffice the needs of underdeveloped and developing nations. Modern solutions like ESG Funds, Green Bonds, Blue Bonds, Cat-bonds, Social Bonds, and Mixed-sustainability bonds are some of the successful ideas to fund sustainable developments across the globe. But there are certain challenges in the future of sustainable finance. The market for sustainable investments remains very niche. It is a very small part of the global financial market. Also, there is a lack of globally agreed standards for such products, which brings their transparency and credibility into question. Moreover, there is a geographical imbalance for such products.

Surprisingly, most of the AUM for sustainability-themed products are linked to investments in developed markets, whereas the most significant sustainable development challenges and need for investment in SDG sectors are in developing countries. According to UNCTAD's World Investment Report 2021, these challenges require three fundamental transitions in the sustainable investment market. First, Sustainability integration must not be linked to niche products. Instead, Sustainable investments should become the 'market norm,' in that market players should strive to make financial products that meet the basic ESG criteria. Second, the orientation of the sustainable investments market needs to change from developed economies to global markets, particularly benefiting developing countries. Greater efforts need to encourage more private investments in emerging economies. Third, SDG investment products' credibility and sustainability ratings need to be enhanced and regulated with standards. To achieve the above goals, UNCTAD launched UN Global Sustainable Finance Observatory. The organization has the vision to integrate sustainability into mainstream investing. Collective efforts of asset managers, banks, and other market participants are needed to transition from the present to the future of the market. More innovations need to be made to channel investments to fund sustainable causes globally. Such changes will shape the future of finance.

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# ABOUT THE CENTRE

The Centre for Excellence in Sustainable Development (CESD) was officially formed in July 2018 to contribute to GIM's quest for environmental sustainability. The Centre started working with three core objectives in mind:

**1. KNOWLEDGE CREATION**

- To develop a model institute for green campus in India and transform GIM community into a more sustainable community. At the same time, use these processes for action research in the field of sustainable development.
- To help develop knowledge through research in the aforesaid fields.

**2. KNOWLEDGE DISSEMINATION**

- To increase awareness about green living and sustainable development in the community around us
- To carry out activities to try to reduce the carbon footprint of the state of Goa and India as a whole.

**3. KNOWLEDGE APPLICATION**

- To develop a resource Centre for sustainable development at GIM for imparting training, providing consultancy and participating in policy making.
- To contribute to the development of start-ups and ventures for sustainable development at the grassroots level.

CESD believes that every graduate of GIM should be a sustainability ambassador and every employee should be a part of GIM's journey towards environmental sustainability. Over the next few years, Centre plans to contribute towards the five sustainable development goals adopted by United Nations member states in 2015 as depicted below.

**RECENT PROJECTS AND ACTIVITIES OF CESD:**

- **Environmental Sustainability at GIM:**
  - "No more use-and-throw" campaign to reduce the use of paper cups at various points of consumption, by switching to more sustainable, reusable alternatives. This campaign shall save around 96000 paper cups from going to the landfill in a year.
  - Organized an E-waste collection drive for faculty, students and staff in March 2022
  - Compilation of case studies on energy, water and waste management at GIM
  - Students project: Study of waste management practices of 30 national and international higher education institutes
- **Stakeholder interactions:**
  - Preparation of a Coffee table book on floral biodiversity of the GIM campus
  - Faunal Biodiversity Register: Documentation of fauna found on the campus by partnering with Goa State Biodiversity Board and other field experts
  - Preparation of a Sustainability Report for GIM
- **International Activities:**
  - CESD worked an international project, Responsibility and Innovation via Social and sustainable Entrepreneurship (RISE) funded by Finnish National Agency, EDUFI, that aims to co-develop a curriculum for partner HEIs for capacity building in the field of social and sustainable entrepreneurship.
  - CESD is a member of The Sustainability Centers Community (SCC). SCC is an engaged, virtual community of more than 150 sustainability centers from around the world
  - Project on Landscaping of SDG Training in India: This project funded by the German Development Institute was on discovering the role of government and private training institutes in localizing the SDGs In India. Prof. Avik Sinha was a core team member.


# MEET THE CESD TEAM


**CHAIR**

**PROF. ARPITA AMARNANI**
Email: arpita@gim.ac.in
Contact No: 0832-2366 755

**MEMBERS**

**PROF. VITHAL S. SUKHATHANKAR**
Email: visukh@gim.ac.in
Contact No: 0832-2366 724

**PROF. AJAY VAMADEVAN**
Email: ajay.vamadevan@gim.ac.in
Contact No: 0832-2366 700

**MS. APOORVA APTE**
Email: apoorva@gim.ac.in
Contact No: 0832-2366 922

**PROF. AVIK SINHA**
Email: avik.sinha@gim.ac.in
Contact No: 0832-2366 749


Please visit us here or scan the QR Code

**For Newsletter or Centre related queries, please write to us at sustainability@gim.ac.in.**