



# SUSTAINABLE DEVELOPMENT GOAL 13

## Climate Action

Take urgent action to combat climate change and its impacts

## Overview

---



Climate change is global and requires a planetary solution but is acted upon locally. We need to kick the carbon habit and stop making our energy from burning things. Climate change is also really important. You can wreck one rainforest, then move, drain one area of resources, and move onto another, but climate change is global.

**Sir David Attenborough,  
Broadcaster, Biologist, Natural Historian and Author**



The mission statement of sustainable development goal 13 is, 'Take urgent action to combat climate change and its impacts.' The word urgent in the message sums up all.

With five targets and eight indicators, SDG 13 is considered one of the biggest stories of our times due to the rapidly changing climate-related impact. Hence, it would not be an exaggeration to say that climate action is the most critical action we can take for the sake of current and future generations.

Two of the four priority research areas identified at the University are Energy and Environment. At Shiv Nadar, we are firmly committed to the global framework of Sustainable Development Goals also reflected in our teaching, research, partnerships, and institutional practices, including reducing carbon footprint, minimizing wastage, use of alternative energy, water conservation, organic food practices, and many more.

The report highlights some of our key action areas.

## Teaching and Learning

The university offers several courses on climate and its impact at the local and global levels. Department of Sociology offers a course on the Anthropology of climate change (SOC305), which introduces students to the new but rich subdiscipline of the anthropology of climate change by questioning how humans have become the center of public debate and international policy precisely as it remains unclear what the future world affected by climate change holds. The Department of Civil Engineering offers a graduate course on Climate and Climate Change (CED660). Many compulsory courses are offered regularly to undergraduate students, such as Atmospheric Aerosols & Climate (CCC 405), Climate Change and Media (CCC 721), Climate Change and Conflict (CCC 719), Environmental Studies (CCC704), Introduction to Climate Change (CCC705), and Environmental Impact Assessment (CCC 406).

### Campus as a Living Lab

Campus as a living lab has become a popular theme on campus. Many Departments across schools encourage students to ideate and submit their final course projects on issues around sustainability, specifically from the campus. These projects address several key topics in sustainability, such as air quality, solar power, electric vehicles, no plastic, sustainable transport, waste management for a circular economy, and many more. The entire exercise is not just a course in the curriculum but a way students think of sustainability as a living reality.



## Student Projects

### ■ Landscape, Memory, and Anticipation in Rudraprayag'

Gideon Mathson, Ph.D. scholar at the Department of Sociology, has researched a disaster's economic, administrative, and psychic fallouts with reference to landscape deterioration. His study area includes large parts of the district of Rudraprayag, around the township of Ukhimath, 45km by road to Kedarnath. The place was drastically affected due to massive landslides triggered at an unprecedented scale following 2013, leaving noticeable deterioration in land stability in these regions.

The study is significant and particularly pivotal in the state's history since the aftermath of the disaster has witnessed a considerable increase in environmental deterioration. The study presents problems pointing to unformalized areas in climate change conversations, such as region-specific loss, damage compensation mechanisms, and administrative procedures for distributing compensatory amounts.

His recent publication, "Caste-based Lists and Fading Maps: Bureaucratic Anxiety and Shifting Landscapes in the Himalayan Uttarakhand after the 2013 Flash Floods," in contributions to Indian Sociology, highlights his significant contributions to the field.



Land Erosion in Ukhimath causing land to 'sink' and 'slide'. These particular scars were formed during the 2013 disaster in Uttarakhand.

### ■ Carbon Neutrality Module - organized by the College of Environmental and Resource Sciences

Amogh Maheshwari, student of Bachelor of Management Studies was selected for [the Global Summer School at Zhejiang University for a summer school program](#). He will be studying the module on Carbon Neutrality. The program introduces learning and understanding some key concepts and significant processes of the Earth's climate system, the characteristic properties and driving forces of climate change, the impacts of climate change and its manifestations, the potential mechanisms, and the role of human activities. It also instills an understanding of the scientific, economic, and political implications of addressing climate change, international and national climate governance frameworks, and technical tools. It also develops the ability to select, read, and summarize cutting-edge scientific literature, as well as case studies and teamwork.



### ■ Analyzing driving factors of India's transportation sector CO2 emissions: Based on LMDI decomposition method.

India is the world's third-largest carbon dioxide (CO<sub>2</sub>) emitter, with the transportation sector accounting for most of this emission. Using the logarithmic-mean Divisia index (LMDI) decomposition method and Tapio decoupling, this study examines the driving factors and their relationship with economic growth for the Indian transportation sector. Transportation-related energy consumption is decomposed into six factors. From 2001 to 2020, CO<sub>2</sub> emissions from the Indian transportation sector increased from 155.9 Mt to 368.2 Mt. Roadways produce 88% of all CO<sub>2</sub> emissions. Energy systems, economic advancement, and population scale increase CO<sub>2</sub> emissions, whereas energy performance and transportation forms decrease. Transport advancement demonstrates both tendencies intermittently. CO<sub>2</sub> emissions from Indian transportation exhibit a weak decoupling. The increasing demand for vehicles, reliance on conventional fuel, and increase in energy consumption indicate a positive correlation with the nation's CO<sub>2</sub> emissions. In contrast, the transition from coal to electric locomotives and the increased use of electric vehicles offset the increase in emissions. In short, the government should update strategic sustainable transport policy measures and emphasize renewable energy. This study will assist policymakers in formulating robust, sustainable transportation policies.

Jain, Siddharth, and Shalini Rankavat. "Analysing driving factors of India's transportation sector CO<sub>2</sub> emissions: Based on LMDI decomposition method." *Heliyon* 9, no. 9 (2023).

### ■ GIS-based landslide susceptibility mapping

Dr. Jagabandhu Dixit and Navdeep Agrawal are conducting significant research at the Disaster Management Laboratory, Department of Civil Engineering. Their recent work is on landslides, a common geological hazard causing impairment of public works and loss of lives worldwide and in India, especially in the Himalayan region. This study aims to map the landslide susceptibility for the Shillong Plateau region of India using different machine learning algorithms and provide insights into influential factors, focusing on disaster risk reduction. The landslide susceptibility maps (LSM) have revealed that the south-southeastern portion of Meghalaya, mainly slopes along the southern escarpment, are more susceptible to landslides. The generated LSMs will assist decision-makers and planners in identifying high-risk areas, prioritizing mitigation measures, and guiding regional development.

Agrawal, Navdeep, and Jagabandhu Dixit. "GIS-based landslide susceptibility mapping of the Meghalaya-Shillong Plateau region using machine learning algorithms." *Bulletin of Engineering Geology and the Environment* 82, no. 5 (2023): 170.

### **A critical review on nanotechnological advancement in biogas production from organic waste**

The fast depletion of fossil fuel reserves (coal, oil, natural gas) with increased environmental pollution has enforced the need for an alternate energy source. A novel, sustainable approach with the implementation of a zero-waste discharge policy is an urgent need of the hour. The review summarizes various reports on nanotechnological advancement in biogas production while highlighting the knowledge gaps. The incorporation of nanoparticles in AD aids in the enhancement of biogas yield, increment in methane content, improvement of effluent quality, and reduction in H<sub>2</sub>S production. These nanoparticles act as the supplier of essential nutrients for synthesizing enzymes and co-factors in anaerobic microorganisms, further stimulating their activity for higher biogas yield.

Dikshit, Pritam Kumar, Susant Kumar Padhi, Lopa Pattanaik, Ariba Khan, Aastha Ranjan, and Soumi Sadhu. "A critical review on nanotechnological advancement in biogas production from organic waste." *Biomass Conversion and Biorefinery* (2023): 1-23.

### **Recent developments on photovoltaic thermal drying systems: a clean energy production**

With the increase in population globally, a big problem has been raised: food supply. A remedy to this problem is using an ancient sun-drying practice to preserve harvests, vegetables, and fruits. Several types of dryers are being developed for drying agricultural commodities. They do, however, demand much energy, which is typically obtained from polluting fossil fuels. Producers and researchers are encouraged to look for alternate options because of environmental issues and the risk of fossil fuel depletion. Continual solar energy can help dry applications because it is widely available in most parts of the world. Solar dryers come in various sizes and designs and may be used to dry a wide range of products. Farmers will find a variety of driers available to meet their demands. A thorough examination of the various designs, methods of construction, and operating ideologies of the numerous sun-drying devices mentioned previously is provided. This study emphasizes the hybrid photovoltaic thermal solar dryer because of its high electrical and thermal efficiency and sound mitigation of carbon dioxide levels, giving a good product with a high drying rate and less payback time.

Manisha, Sumit Tiwari, Deepak Chhabra, Meena Kumari, Prabhakar Tiwari, and Ravinder Kumar Sahdev. "Recent developments on photovoltaic thermal drying systems: a clean energy production." *Clean Technologies and Environmental Policy* 25, no. 7 (2023): 2099-2122.

### ■ Tribological Behavior of Bioinspired Surfaces

Energy losses due to various tribological phenomena pose a significant challenge to sustainable development. These energy losses also contribute toward increased emissions of greenhouse gases. Various attempts have been made to reduce energy consumption through the use of various surface engineering solutions. Bioinspired surfaces can provide a sustainable solution to address these tribological challenges by minimizing friction and wear. The current study focuses on recent advancements in the tribological behavior of bioinspired surfaces and materials.

Sharma, Sachin Kumar, and Harpreet Singh Grewal. "Tribological behavior of bioinspired surfaces." *Biomimetics* 8, no. 1 (2023): 62.

### ■ Ocean Renewable Energy: A Comparative Study of Indian and Global Collaborative Research for Sustainability and Policy Implications

To combat the effects of climate change and meet the need for clean energy, the global power sector has undergone a significant transformation over the past few decades, for which all possible renewable energy sources are currently being utilized. To achieve sustainable growth, India, like many other countries, is also in the energy transition process, aiming to shift to renewable energy-based power generation. In this transition, research in Ocean Renewable Energy (ORE) technologies is rising to rapid prominence. This study examines the state of ORE research in India. It compares it with global research activities in this field using a graph-theoretical framework for collaboration co-authorship networks in ORE. It uses bibliometric data on published scholarly articles indexed in two well-known electronic databases covering two 10-year windows: 1999-2008 and 2009-2018, inclusive.

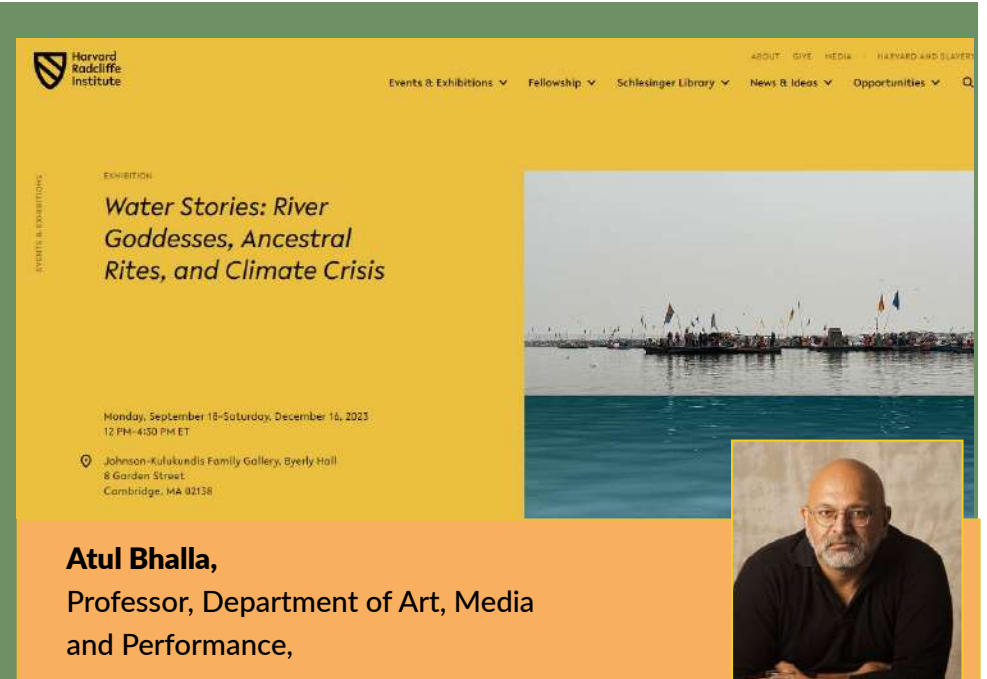
Kshitij, Avinash, and Jaideep Ghosh. "Ocean Renewable Energy: A Comparative Study of Indian and Global Collaborative Research for Sustainability and Policy Implications." *Journal of Scientometric Research* 12, no. 2 (2023): 357-371.



## Water Stories: River Goddesses, Ancestral Rites, and Climate Crisis

Atul Bhalla, Professor, Department of Art, Media and Performance, was a participating artist in “[Water Stories: River Goddesses, Ancestral Rites, and Climate Crisis](#)” at the Radcliffe Institute for Advanced Study, Harvard University.

The exhibition ran from September 18 to December 16, 2023, and presented artworks that tell alternative stories of water experiences in the context of climate change. The event juxtaposes older, traditional paintings depicting myths with works by contemporary artists that evoke aesthetic experiences of water in the age of climate crisis. They treat water not as a commodity to be exploited but as a cyclical, life-giving, life-dissolving, and inert but innately alive spiritual force—a view widely shared among Indigenous communities, especially in the Global South, encouraging viewers to appreciate the multivalent meaning of water and to contemplate their relationship with it.



The screenshot shows the Harvard Radcliffe Institute website for the exhibition. The header includes the Harvard Radcliffe Institute logo and navigation links for Events & Exhibitions, Fellowship, Schlesinger Library, News & Ideas, and Opportunities. The main content area features the exhibition title, dates (Monday, September 18 to Saturday, December 16, 2023, 12 PM - 4:30 PM ET), and location (Johnson-Kukulundis Family Gallery, Byerly Hall, 8 Garden Street, Cambridge, MA 02138). A large image of a river scene with many boats is displayed, along with a portrait of Atul Bhalla. The text below the portrait identifies him as Professor, Department of Art, Media and Performance.

## ■ Incentivizing endemic biodiversity conservation under a warming climate through market-based instruments

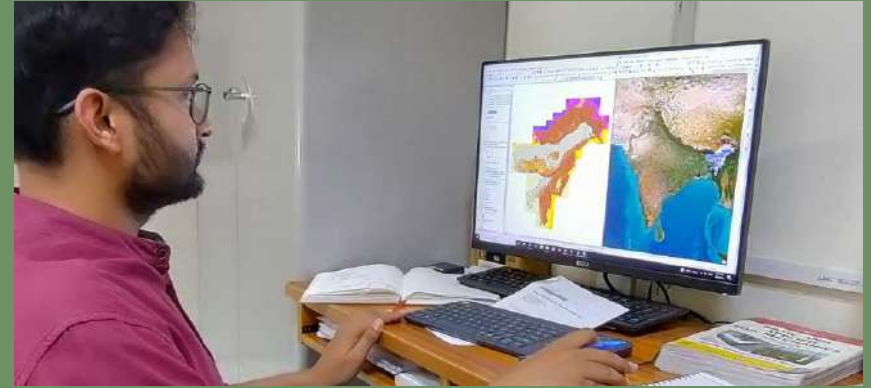
This study investigates the potential of utilizing payment for ecosystem services (PES) led incentives to support the conservation of endemic biodiversity and the development of alternative livelihood opportunities, specifically through ecotourism, in regions facing water scarcity. It highlights the ability of PES programs to not only generate additional income for communities and encourage land use practices that safeguard biodiversity and enhance water recharge. Moreover, when social norms adapt and transform as water availability improves and PES incomes increase, it may promote the emergence of community-driven ecotourism ventures. Using the case of the lateritic plateaus in the Konkan region of Maharashtra, India, we design a dynamic optimization model of the local community’s utility maximization problem under land use choices that could provide them with water security and alternative livelihoods through ecotourism. The findings indicate that when PES income is substantial, community norms and social enterprises undergo a synergistic transformation, offering livelihood resilience in a warming climate. Moreover, as rising temperatures diminish the productivity of conventional land use choices like mango orchards, timely intervention through PES programs can effectively avert an irreparable degradation of the lateritic plateaus while ensuring sustainable water resources in the long run. © 2023 Journal of Environmental Economics and Policy Ltd.

Ranjan, Ram. “Incentivizing endemic biodiversity conservation under a warming climate through market-based instruments.” *Journal of Environmental Economics and Policy* (2023): 1-24.



## ■ Disaster Management Laboratory

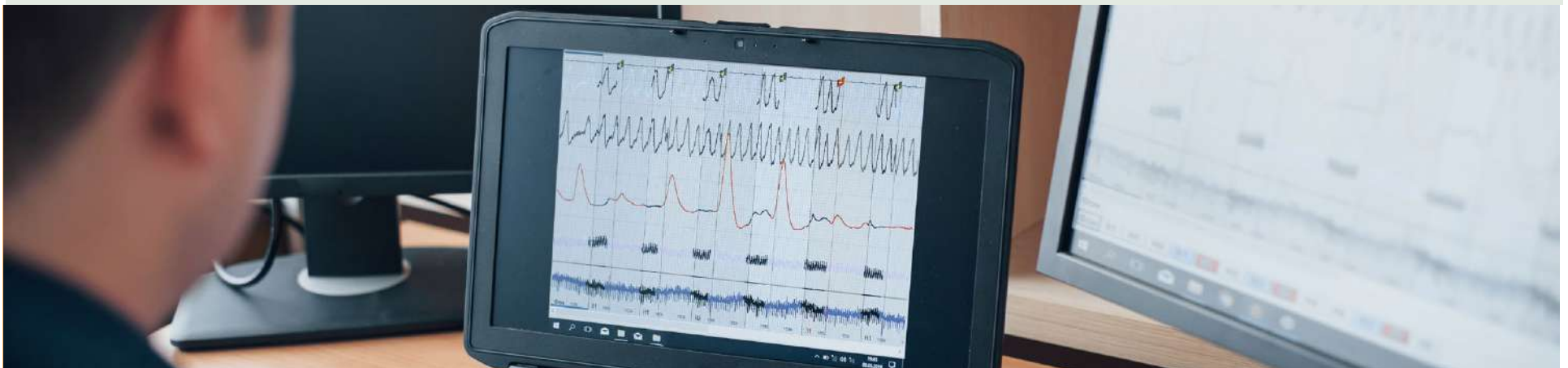
The Department of Civil Engineering houses Disaster Management Lab dedicated to developing innovative approaches and utilizing advanced computational technologies to revolutionize societal resilience to natural hazards. The research projects focus on fundamental and applied aspects of natural hazards and disaster risk reduction. They focus on GIS-based spatiotemporal multi-hazard risk assessment, mapping, sustainable infrastructure development, and their role in decision-making.



## ■ Geo-information for Disaster Monitoring and Management

This publication provides insight into advancing remote sensing techniques dealing with floods, droughts, landslides, earthquakes, permafrost-related hazards, glacial lake outburst floods, forest fires, droughts, tropical cyclones, climate resilience, and COVID-19. It incorporates the latest technologies and techniques to illustrate disaster monitoring for acquiring information and disseminating technological results and outcomes for the betterment of society. The publication would be of immense importance for earth scientists, policymakers, and professionals in disaster risk reduction.

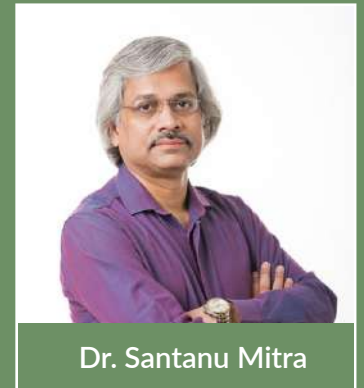
Pandey, PC., Kumar, R., Pandey, M., Giuliani, G., Srivastava, PK., and Sharma, RK. (2024). Geo-information for Disaster Monitoring and Management. Springer. DOI: <https://doi.org/10.1007/978-3-031-51053-3> ISBN978-3-031-51052-6 ISBN978-3-031-51053-3(eBook)



## Conversations on Campus

### ■ Project Urja - Commitment towards fostering a greener planet and empowering the future generation.

Embarking on a visionary journey towards a sustainable future, Dr. Santanu Mitra, Professor, Department of Mechanical Engineering at the School of Engineering, and his dedicated research group, has taken a pivotal step to mentor students from Shiv Nadar School, Noida. This knowledge-sharing initiative aims to enlighten younger minds about the crucial aspects of energy conservation, the technical intricacies of wind turbines, and the fundamental physics behind their operation, a practical understanding of energy audit, thus offering students a holistic view of the sustainable energy landscape. The students get hands-on experience fabricating a wind turbine, encouraging them to contribute to the sustainable energy landscape actively.



### ■ Young Environmentalist program held as a part of the Young Thinkers Forum.

The program was held between October 28-29, 2023, for school students in grades 7 to 12. The program is created to help students understand what it means to live sustainably and what they can do to reduce their carbon footprint. Attended by 25 students and faculty, the program taught students the importance of biodiversity for a healthy environment.



#### ▶ DEPARTMENT OF CIVIL ENGINEERING

##### Seminar

### Passive Climate Adaptability: A Way to Future-Proof Buildings Against the Challenges of Global Warming



Speaker

#### Dr. Mitja Košir

Associate Professor, Head of Chair of Buildings and Constructional Complexes, Faculty of Civil and Geodetic Engineering, University of Ljubljana, Slovenia

Moderator

#### Dr. Manoj Kumar Singh

Assistant Professor  
Department of Civil Engineering,  
Shiv Nadar University, Delhi NCR



**Abstract:** Global warming is a major challenge for our civilization, affecting all aspects of society, including the built environment. Buildings have long lifecycles, so it is essential to design them carefully, as today's design decisions may not be the best solutions for optimum performance in the future.

Department of Economics  
Virtual Talk

## Rice Prices, Agricultural Fires and Air Pollution in the Indo-Gangetic Plains

Speaker:  
**Dr. Digvijay Singh Negi**  
IGIDR



(Friday) 9th February 2024  
10:00 AM to 11:00 AM (IST)

Joining Link: [t.ly/16ktv](https://t.ly/16ktv)



Scan to Join

Department of Chemical Engineering,  
Cordially invite you to our seminar on

## PLASTICS: DO NOT BAN, PLAN TO USE.

**Abstract:** Plastics in different formats are with us for various uses and services for the last 50-60 years or so. It was considered to be a wonder material for different applications, both domestic and industrial services for its durability, flexibility to fabricate and to construct. The prime reason for such versatile application as stated above for this being lightweight, non-corrosive was preferred material in various industrial applications. Plastics of various grades and specifications are being used extensively in passenger vehicle manufacturing, railway coaches, aircraft cabins, construction activities like tanks and vessels and also for electrical items. The most common visible application of plastics is in disposable cups and saucers, soft drink cans and bottles, carry bags, packing boxes for groceries and sweets and all such items. However, the plastics are becoming now a notorious and non-friendly material for all the wrong reasons. It is cited to be a hazardous material for living not to say an gradually material causing long term pollution to the earth surface, water bodies, river and seas, high altitude snow laden areas. There is a general perception of how much plastic is being



**Mr. Subhash Tandon**  
Present Chairman, Member  
Sectoral Expert Committee,  
Chlor-Alkali, Bureau of Energy  
Efficiency, New Delhi

**DATE:** Thursday, 12 January 2023  
**TIME:** 12:00 PM  
**VENUE:** D-330, Shiv Nadar IoE

SHIV NADAR UNIVERSITY  
SCHOOL OF ENGINEERING

### RESEARCH EXHIBITION

SUSTAINABLE INFRASTRUCTURE SYSTEMS | WATER, ENVIRONMENT & CLIMATE | URBAN NETWORK SYSTEMS

**ABOUT THE EVENT**

The Department of Civil Engineering is actively engaged in advanced research in the key areas of Sustainable Infrastructure Systems, Water, Environment & Climate, and Urban Network Systems. The department is excited to present the first edition of the Research exhibition, which will feature ongoing, state-of-the-art research. The Research Exhibition serves as a platform for our esteemed PhD scholars to present their ongoing research endeavours through engaging poster presentations.

**EVENT SCHEDULE**

Inaugural talk by Prof. M. Parida	10:30 - 11:30 AM
Poster presentations	11:30 AM - 04:00 PM
Event Conclusion	04:00 - 4:30 PM

**INAUGURAL TALK**



**PROF. M. PARIDA**  
Director, CSIR - Central Road Research Institute (CRRI), New Delhi

**Empowering Young Minds for Sustainable Development**



Topic

## Ethnography as Climate Theory



Speaker

**Prof. Nayanika Mathur**  
Professor of Anthropology and South Asian Studies at the University of Oxford

**ABOUT THE SPEAKER:**  
Nayanika Mathur is Professor of Anthropology and South Asian Studies at the University of Oxford. She is the author of *Rising Signs* (on biodiversity) and the *Developmental State in Himalayan India* (Cambridge University Press). Her research interests include

**ABSTRACT:**

The talk builds upon on-going research in the Indian Himalaya to query the hierarchy between ethnography and history. This question is one that continues to be by open in the discipline of anthropology with theory considered an elevated form of analysis. This longstanding distinction can be not just challenged but also undone by rooted and rooted climate ethnographies. I will make this case for climate ethnographies constituting critical theory through a focus on nonhuman agency through ethnographic storytelling. I will underscore the new vocabularies through which (as of habitus and accustoming change as well as periodic disasters are being described in the Himalaya. This will include the usage of new words as well as the deployment of particular types of phrases. I will also foreground how new technologies are being used to communicate changing conditions in the Himalaya, and what the mix of audio, video, and language produces. I am interested in exploring the kind of conceptual work that is done by these shifts in language and the means through which people interact. Finally, I demonstrate in this paper how a foregrounding of nonhuman agency - ones that express rage through intense floods and mountains that are quite literally smiling as well as nonhuman animals that are behaving in unpredictable and

SEM INAR



Department of Chemical Engineering, School of Engineering  
Cordially invites you to our seminar by

**PROF. RAKESH K. GUPTA**

Department of Chemical Engineering,  
West Virginia University, Morgantown,  
WV, USA

on \_\_\_\_\_  
**STRATEGIES FOR ADDRESSING THE PROBLEM OF SINGLE-USE PLASTICS**

**16 JAN 2023** TIME 03:30 PM  
VENUE D330

## University Operations

On the occasion of 75 years of Independence, the Hon'ble Prime Minister of India, Shri Narendra Modi, and Secretary General of the United Nations, Mr. Antonio Guterres, launched U75 - The National Movement of Net Zero on University Campuses, to be led by 75 universities across India.

**Shiv Nadar University is selected as one of the 75 institutions for the National Movement of Net Zero University Campuses.**

At the microcosm of Shiv Nadar, we are committed to contributing to the overall socio-environmental sustainability by embarking on a journey to Carbon Neutrality. We have taken multiple initiatives in the structured sustainability framework with specific targets and timelines. The university has a policy that promotes environment-friendly & low-emission practices in water, energy, waste, habitat protection, etc. One such method is assessing the carbon footprint of its activities and undertaking initiatives to reduce the carbon footprint and aim to become a carbon-neutral campus.

We have been awarded ISO 14001:2015 and ISO 45001:2018 accreditation without any nonconformance or observation.

### Carbon Sequestration

Along with our carbon footprint, we have been calculating carbon sequestration of the green areas of the campus since 2019.

**We are proud that the plantation and horticulture practices on campus have nullified 17 percent of the carbon dioxide.**

In this study, the scope for carbon sequestration, a total of 17,281 trees on the campus, 1,10,704 shrubs, and 33.9439 hectares of grass cover under three different species of grass in the campus of Shiv Nadar University was computed. The process considered the carbon sequestration of the whole university campus, focusing on the three components of the terrestrial carbon pool (trees, shrubs, and grass cover). Carbon sink pools are the trees, shrubs, and soil covered under different grasses.



## ■ Tree Planting activities

At Shiv Nadar University, we have a culture of planting trees on occasions and events and have regular drives. These drives are a success with the support of many student, staff and faculty volunteers,



## ■ Technology Integration on Campus

**Energy Optimization Monitors** in our LEED and IGBC-certified building with integrated sensors, IoT devices, and automation systems for optimized energy use and reduced overall environmental impact

---

**Effective electric vehicle infrastructure** on campus to transition 50% of the car fleet to electric vehicles, increase mobility on campus, and reduce carbon footprint and dependency on fossil fuels.

---

**Modular sewage treatment plant technology** installed on campus has a capacity of 734 KLD. The STP treats 550 KLD water from the entire campus, including campus housing.

---

**Monitoring platforms** installed to track energy usage, waste generation, water consumption, and other sustainability metrics to enable informed decisions for continuous improvement

---

**Extensive solar panels** 1.1 MW of solar power installed on campus across academic and residential blocks to transition from complete captive power and generate clean, sustainable energy on campus

---

**Energy-saving policy** embraced, replacing 11KV grid power with 33 KV grid power supply and removing the need for running standby power through diesel generators.

**At our 2023 Convocation, we brought together a full spectrum of digital experiences, significantly reducing the volume of printed materials.**



## ■ Other campus-wide initiatives:

### Energy-efficient appliances:

- We have installed 1.1 MW of solar power on campus, which caters to 26% of campus energy needs.
- 85 % of our buildings are certified by the Indian Green Building Council (IGBC) and Leadership in Energy and Environmental Design (LEED) for smart building controls and extensive water conservation processes.
- LPG (liquid petroleum gas) has been replaced with Pressurized Natural Gas (PNG) for the campus-wide cooking facilities
- Motion sensors are installed in toilets in academic and hostel blocks along with battery-operated urinal sensors converted to electrically operated sensors
- Heat Pump has been installed in hostel clusters to avoid wastage of hot water and effective control of electrical energy

## Energy review and analysis

- We calculate the Carbon Footprint (CFP) annually, covering Scope 1, Scope 2, and Scope 3 emissions.
- We conduct a careful review, analysis, and refurbishment of laboratories for the safety of operations and environmental conservation
- Each year, we conduct tree plantation drives both in-house and through our service provider, Green O Tech, as part of the recycling process.

## Travel less and wisely

- Students and most of our faculty stay on campus. A well-planned transport system is in place for those who travel to work and for weekly needs
- Within the campus, students and staff use bicycles to commute
- We are committed to transitioning 50% of the car fleet to electric vehicles. The University currently has 60% CNG, 30% petrol, and 10% diesel cars

## Green Campus Initiatives

- A 22-seater E-bus was added to our existing Campus Shuttle fleet. This will help increase mobility on campus and a step towards reducing carbon footprints and dependency on fossil fuels.
- We planted 260 plants through an NGO in return for disposing of two tons of paper scrap to a certified agency that handles disposal and recycling.
- In addition to reducing 200 streetlights from 60 watts to 45 watts, 700 streetlights were installed by the university in the village of Chitehra in the surrounding area.



## Partnerships

### Industry-Academia partnership to drive sustainable technological advancements

Shiv Nadar University, in partnership with Bharat Petroleum's Corporate Research & Development Centre (CRDC), is a significant stride towards advancing sustainable chemical processing technologies. By focusing on process intensification for highly exothermic reactions, [the project](#) aims to develop novel reactor designs that enhance energy efficiency and reduce waste. This initiative aligns with several critical sustainable development goals, including Goal 9: Industry, Innovation, and Infrastructure - By fostering sustainable industrial innovation and infrastructure development through advanced reactor designs. Goal 12: Responsible Consumption and Production - By emphasizing efficient heat management and reducing the environmental impact of chemical processes. Goal 13: Climate Action - By enhancing energy efficiency and minimizing waste, our collaboration contributes to efforts to mitigate climate change impacts. This partnership exemplifies how industry-academia collaborations can drive sustainable technological advancements, aligning with India's commitment to the United Nations Sustainable Development Goals (SDGs). This partnership project is going to have a positive impact on industry standards and environmental sustainability.





## Community Initiative - Dadri Development Project

Shiv Nadar University is located in a region called Dadri in Uttar Pradesh. Dadri is a rapidly urbanizing rural region with high socio-economic inequality and low SDG outcomes. The university is deeply committed to generating a positive impact on the area and, accordingly, has assumed a central role in the Dadri Development Project, a transformative initiative convened by the Shiv Nadar Foundation (SNF), a non-governmental organization. The project aims to create a “model sustainable rural community around Shiv Nadar University.” This commitment is shared by the university leadership, staff, and students and is instilled in the core of the University’s academic mission.

The projects include well-considered, need-based interventions with multi-stakeholder engagement, implemented in phases, supported by thorough evidence, and subjected to rigorous monitoring and evaluation. These projects focus on education, health care, skill development for employability, social safety, nature conservation, agriculture, and imparting knowledge on effective use of resources in our daily life.



## Inter-institutional partnerships

Shiv Nadar Foundation has launched an inter-institutional collaborative grant, a first-of-its-kind initiative with a grant of INR 40,00,000 each for the selected proposals. The idea behind the grant is to promote the spirit of collaborative research among the member entities of the Shiv Nadar Foundation. Two projects from Shiv Nadar University were selected. One of the grant projects is to work on **“Strategizing control policies to combat air pollution through controlling emissions from fugitive dust in Delhi and Chennai: Application of computational models from experimental results.”**

This collaboration is between Shiv Nadar University, Delhi NCR, Sri Sivasubramaniya Nadar College of Engineering, Chennai, and three Shiv Nadar Schools in Faridabad, Gurugram, and Noida.

## Start-ups in climate ecosystems

The University supports start-up ideas through the Atal Incubation Center (AIC) to encourage and create an active entrepreneurship culture. AIC is set up on a 10,000 sq. ft space at the University with the support of the Atal Innovation Mission, NITI Aayog, Government of India. The University and the Government provide 50% of the core funding to a start-up selected through a rigorous process and mentoring through university leadership and professors.

The Center has supported over 100 start-ups and incubated over 45 in 2023.

Some examples that are working in climate ecosystems,

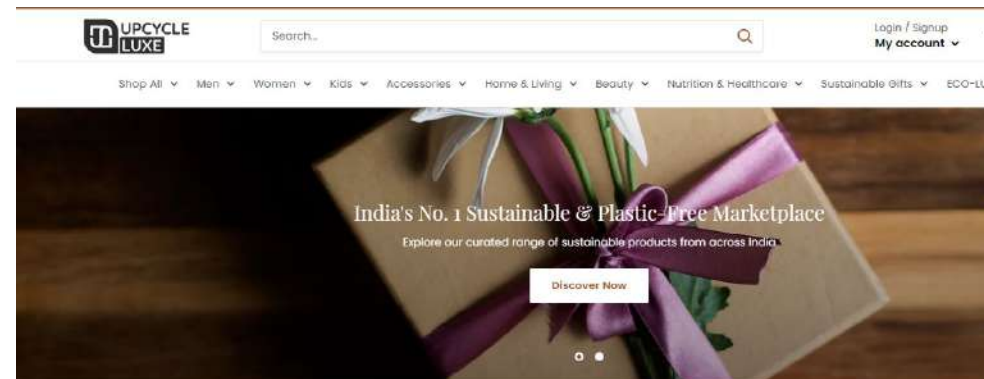
### Recycle Baba

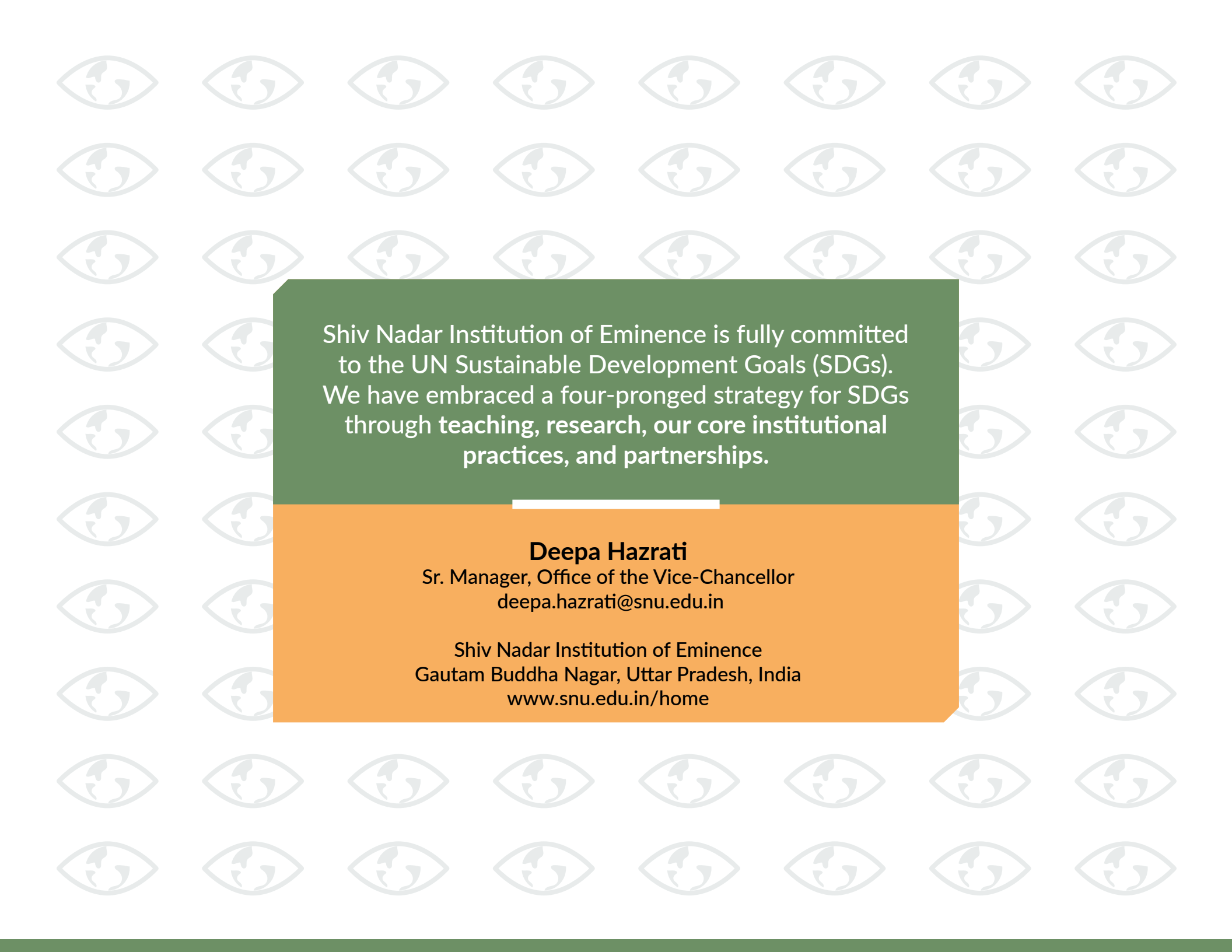
Recycle Baba is a revolutionary scrap-buying startup! They are dedicated to providing top-quality recycling services for residential and commercial customers. As a [startup](#), they are driven by innovation and a desire to make selling scrap materials as simple and convenient as possible. The startup works in the area of Circular Economy. Run by a team of 5 people, the start-up is led by Aasif Khan.



### Upcycleluxe

Upcycleluxe is India's first carbon-neutral marketplace, positioned at the forefront of the sustainable and plastic-free movement. The platform serves as a one-stop shop, offering a diverse range of upcycled, recycled, chemical-free, organic, zero-waste, and ethically made products. With a focus on meeting the evolving demands of conscious consumers, [Upcycleluxe](#) is committed to providing impactful items that contribute to a greener and cleaner planet. Founded by Harshita Chandra, this small start-up is run by a team of three people.





Shiv Nadar Institution of Eminence is fully committed to the UN Sustainable Development Goals (SDGs). We have embraced a four-pronged strategy for SDGs through teaching, research, our core institutional practices, and partnerships.

**Deepa Hazrati**

Sr. Manager, Office of the Vice-Chancellor  
[deepa.hazrati@snu.edu.in](mailto:deepa.hazrati@snu.edu.in)

Shiv Nadar Institution of Eminence  
Gautam Buddha Nagar, Uttar Pradesh, India  
[www.snu.edu.in/home](http://www.snu.edu.in/home)