



SDG 13: CLIMATE CHANGE

Progress Report 2023-2024

MANAV RACHNA UNIVERSITY

Established wide Haryana state Legislature Act
No 26 of 2014 & under section 2(f) of UGC 1956



Conserve and Sustainably Use
the Oceans, Seas and Marine
Resources





PREAMBLE

WE, THE FACULTY, STAFF, AND STUDENTS OF MANAV RACHNA UNIVERSITY, recognizing that climate change poses the single greatest threat to global sustainable development, peace, and prosperity, hereby affirm our urgent and proactive commitment to the objectives of the United Nations Sustainable Development Goal 13: Take urgent action to combat climate change and its impacts.

WHEREAS the severity of climate change necessitates systemic transformation, involving significant reductions in greenhouse gas emissions and enhanced capacity for climate change mitigation and adaptation;

WHEREAS the institution demonstrates its commitment through emissions reduction and carbon neutrality efforts, achieved by prioritizing energy efficiency measures, increasing the use of renewable energy (Solar PV) on campus, and promoting sustainable transportation to reduce the institutional carbon footprint;

WHEREAS we actively integrate climate change measures into our curriculum, research, and institutional planning, particularly through the Sahritha vertical, which focuses on developing interdisciplinary strategies and technologies for climate adaptation and resilience;

WHEREAS building awareness and institutional capacity is essential, requiring continuous education and training for students and local communities on the causes and impacts of climate change, early warning systems, and effective disaster risk reduction (DRR) strategies;

NOW, THEREFORE, BE IT RESOLVED that Manav Rachna University shall continue to aggressively monitor and reduce its ecological impact; dedicate its scientific and engineering expertise to climate-focused research and innovation; and strengthen the climate-resilience and adaptive capacity of the campus and its surrounding communities, thereby contributing robustly to global efforts to stabilize the climate and safeguard the planet.

1. Global Context

Sustainable Development Goal 13 (Climate Action) calls for **urgent, coordinated global efforts** to combat climate change and mitigate its devastating impacts. Climate change, caused primarily by human activities, is already disrupting weather patterns, biodiversity, agriculture, and water systems across the globe.

The key targets of SDG 13 include:

- Strengthening resilience and adaptive capacity to climate-related hazards and natural disasters,
- Integrating climate change measures into national policies, strategies, and planning,
- Improving education, awareness, and human and institutional capacity on climate change mitigation, adaptation, and early warning,
- Mobilizing financial resources and supporting mechanisms for climate action in developing countries.

The **UN Intergovernmental Panel on Climate Change (IPCC)** warns that limiting global warming to 1.5°C is critical, requiring deep emissions reductions and system-wide transformation by 2030. This necessitates active participation from all sectors—especially education.

1.1 Relevance to Higher Education & Manav Rachna University's Mission

Higher education institutions are vital catalysts for advancing climate action through:

- **Research and innovation** on sustainable technologies, clean energy, climate modeling, and policy solutions,
- Educating and training **climate-conscious global citizens**,
- Implementing **green campus initiatives** that model sustainable living,
- Engaging with communities to promote local climate resilience.

At **Manav Rachna University (MRU)**, **climate consciousness** is embedded in its **mission to foster outcome-based holistic education** and to **promote sustainable development as a thrust area of research and innovation**. MRU aligns with SDG 13 through:

- **Curricular integration** of environmental science, sustainability, and green technologies across disciplines,
- **Research projects and faculty expertise** focused on renewable energy, climate risk assessment, and sustainable materials,

- **Student-led eco-clubs and outreach programs** driving climate awareness and action in local communities,
- Institutional efforts toward becoming a **green campus** through energy-efficient infrastructure, waste management, and plantation drives.

In line with its vision of producing ethical and globally responsible citizens, MRU recognizes the urgency of the climate crisis and is committed to preparing future leaders and innovators who can contribute to building a climate-resilient and sustainable world.

1.2 University Vision and Commitments

MRU's Strategic Commitment to the Goal

Manav Rachna University (MRU) is strategically committed to addressing the climate crisis through education, research, innovation, and community engagement. Aligned with **SDG 13 – Climate Action**, MRU actively fosters climate responsibility among students, faculty, and stakeholders. The university recognizes that higher education plays a transformative role in advancing sustainable practices, mitigating environmental risks, and preparing future leaders equipped to address climate-related challenges.

MRU's strategic initiatives focus on:

- Promoting **interdisciplinary climate research**,
- Embedding **sustainability into the curriculum**,
- Encouraging **student participation** in green initiatives,
- Reducing the university's **own carbon footprint**.

1.3 Policy Alignment and Institutional Values

MRU's policies and institutional ethos align with **national environmental mandates**, **global climate commitments**, and the **United Nations Sustainable Development Goals**. These policies reflect MRU's core values of **sustainability**, **ethics**, **social responsibility**, and **innovation**. Specific institutional alignments include:

- **Sustainability Policy:** Guiding the adoption of eco-friendly practices in energy, water, and waste management.
- **Green Audit and Energy Audit Reports:** Driving continuous assessment and improvement of the university's environmental impact.
- **Academic Policy:** Ensuring environmental education is integrated into both technical and non-technical programs.
- **Research and Innovation Policy:** Encouraging climate-centric research through funding, incubation, and collaboration.

MRU fosters a culture of **environmental stewardship**, where values like ecological integrity, accountability, and proactive citizenship are nurtured among students and staff alike.

1.4 Key Administrative/Academic Units Involved

Several key administrative and academic units at MRU are actively engaged in furthering climate action and sustainability goals:

- **Centre for Environment and Climate Change Research (CECCR):** Leads climate-focused research, faculty collaborations, and external partnerships on environmental solutions.
- **Department of Civil Engineering and Environmental Sciences:** Engages in academic and applied research on sustainable infrastructure, waste management, and climate resilience.
- **Institution’s Innovation Council (IIC):** Promotes green entrepreneurship and frugal innovations targeting environmental challenges.
- **Green and Eco Club (Student Body):** Drives awareness campaigns, plantation drives, clean energy advocacy, and sustainable lifestyle promotion on campus and in surrounding communities.
- **Estate & Infrastructure Management Division:** Implements energy-efficient technologies, waste segregation, and eco-conscious campus design.
- **IQAC & Sustainability Cell:** Ensures integration of environmental objectives into quality benchmarks, institutional planning, and stakeholder engagement.

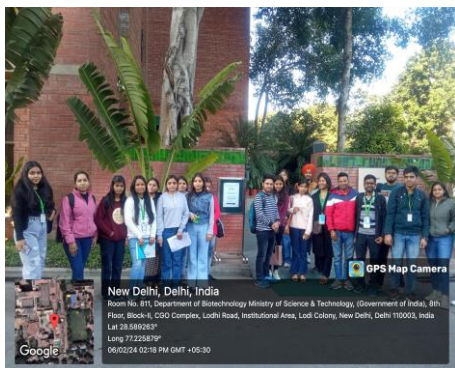
Together, these units reflect MRU’s institution-wide commitment to **climate action, resilience building, and environmental sustainability**, supporting both local and global climate objectives.

2. Academic Integration

2.1 Curriculum Mapping

Environmental themes related to **climate change, sustainability, energy management, and ecological impact** have been embedded across undergraduate and postgraduate courses, especially in Environmental Science, Civil Engineering, and Management disciplines. These integrations sensitize students to climate concerns, sustainable practices, and mitigation strategies.

Students participated in Water and Waste Management Conclave Participation (19 January 2024) organized by: Mu Gamma Research & Consultancy Organization. Students attended a one-day conclave that addressed emerging contaminants, chemical pollution, and climate-related environmental risks—critical issues under SDG 13. The event also featured the launch of a scientific book titled “Endocrine Disrupting Chemicals: Environmental Occurrence, Risk, and Remediation” (Elsevier).



2.2 SDG-related Course Certifications

- **Eco Blend Webinar (Nov 25, 2023)** – Students participated in a session on growing microgreens at home, aligning with SDG 13 by promoting sustainable agriculture, reducing food miles, and enhancing awareness of eco-friendly urban practices.



- **Regular skill set enhancement at mru-certifications earned by students and faculty members**

Skill development and enhancement are essential aspects of institutional growth. The university is dedicated to organizing programs for faculty and students, through its qualified constituent bodies, to continuously enhance skills in line with the latest technologies. Additionally, faculty members and students are encouraged to participate in seminars, conferences, workshops, training programs, and short-term courses both within and outside the university. Sample certifications obtained by faculty and students in areas relevant to SDG 13 are listed below.



Sample certifications obtained by faculty and students in areas relevant to SDG 13 are listed below.

2.3 Key Initiatives and Achievements

2.3.1 Community Projects

Plantation Drive in Sector 21 (July 17, 2023)

In collaboration with the Dr. O.P. Bhalla Foundation, this initiative created a new green belt near the hostel area, enhancing urban green cover and community awareness on carbon sequestration through afforestation.



2.3.2 Project Handmade Papers (Aug 9, 2023)

Students repurposed waste paper into designer handmade sheets, promoting resource recycling and circular economy practices to reduce deforestation and emissions from paper waste.



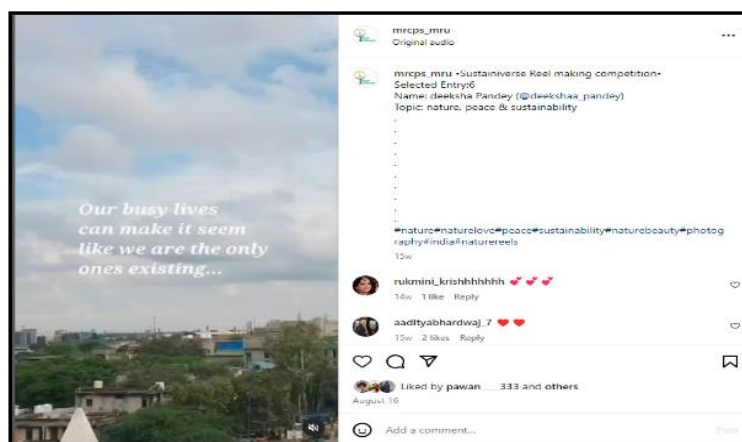
2.3.3 Kites from Scrap (Jan 11, 2024)

A sustainability-themed kite-making competition focused on upcycling and creative reuse of materials to minimize landfill contributions and environmental impact.



2.3.4 SustainiVerse Reel Competition (Aug 13, 2023)

Students created digital reels promoting peace and sustainability, encouraging climate consciousness and advocacy through creative storytelling on social media platforms.



3. Research Contributions

3.1 Relevant Publications

- Yogita Sharma (Faculty of Management)
 - *Sustainability and Role Conflict: A Bibliometric Analysis* – E3S Web of Conferences, 2023
 - *Sustainability in Electric Vehicles: Life Cycle Assessment Trends*, 2023
- Dr. Sunil Kadyan
 - *Environmental, Social, Governance (ESG) & Sustainable Finance: Emergence of New Era of Investing*, 2023
- Shweta Goel
 - *Sustainable Computing in India: Power Awareness Study* – JETIR, March 2024
- Dr. Yogita Sharma
 - *Sustainable Fashion in the Textile Industry* – Empirical Economics Letters, June 2024

3.2 Patents and Innovations

- Effective Carbon Mitigation using Supply Chain Principles – Mr. M.K. Koul (2023)
 - Lightning Protection System for Rooftop Solar Panels – Dinesh Kumar Sharma et al. (Oct 2023)
 - Erosion Protection System for Solar PV Panels – Dinesh Kumar Sharma (Nov 2023)
- These innovations promote renewable energy resilience and low-carbon transitions.



3.3 Capacity Building & Engagement

3.3.1 FDPs and Workshops

- **Eco Blend Webinar: Growing Microgreens** – Introduced sustainable food practices to over 60 participants, promoting low-carbon lifestyle choices and personal food cultivation.



3.3.2 Conferences/FDP Organized/Participated

- Faculty members actively presented climate and sustainability-related work at international conferences (e.g., E3S Web of Conferences, 2023).
- Faculty Development Program on Solid Waste & Disaster Risk (18–22 March 2024) was organized on title “Unearthed Dangers: The Hidden Threats of Solid Waste in Disaster Risk” by: School of Sciences, Manav Rachna University in collaboration with Hazardous Waste Management Division, Ministry of Environment, Forest and Climate Change (MoEF&CC). The objective is to build academic and policy-level capacity around the risks posed by solid waste mismanagement in the context of climate-driven disasters. The Five-day training with national and international experts from JNU, IIT Delhi, MoEF&CC, BHU, and more. covering sessions on disaster risk reduction & waste management linkages, community participation & composting techniques, health risks from unmanaged solid waste, role of GIS & plastic waste challenges. The FDP equipped faculty and researchers with technical, regulatory, and environmental frameworks for mitigating climate risks associated with solid and hazardous waste.



3.3.3 Guest Lectures and Talks

Sessions by external and in-house experts (e.g., Wirra Creado) on urban farming and sustainability practices enhanced knowledge transfer and community capacity.

3.4 Student and Faculty Projects

- **Upcycled Art Competitions and Green Campaigns:** Students engaged in sustainable design, biodiversity scavenger hunts, and crafting from waste, contributing to experiential learning on ecological balance and resource conservation.

- **Outreach & Impact Activities**

1. **Scavenger Hunt – Biodiversity Mapping (Oct 19, 2023)**

Students explored biodiversity in the campus ecosystem through gamified learning, promoting appreciation of local ecology and climate-sensitive species.



- **Key Performance Indicators (KPIs)**

KPI Category	Indicator	2023–24 Outcome
Green Campus Engagement	No. of plantation/environmental restoration drives conducted	1 large-scale tree plantation drive
Student Participation	No. of students engaged in climate/sustainability initiatives	150+ students across 5 events
Eco-literacy	No. of awareness campaigns or competitions promoting climate action	3 competitions/webinars (Handmade Paper, Reel Making, Kites from Scrap)
Research Contributions	No. of SDG 13-relevant research publications	5 publications in 2023–24
Innovation & IP Output	No. of patents aligned with sustainable technologies	3 climate-resilient patents filed/published
Community Education	No. of external workshops/webinars on eco-conscious living	1 webinar on Microgreens Cultivation (60+ attendance)

- **Outcome Highlights (2023–24)**

Impact Area	Evidence of Outcome
Carbon Sequestration & Greening	Plantation drive at Sector 21 created a new green belt with 30+ saplings.

Innovation in Renewable Energy	Patents on solar panel protection systems promote longevity and efficiency of green energy infrastructure.
Sustainable Consumption	“Handmade Paper” and “Kites from Scrap” events promoted resource reuse, upcycling, and circular economy values.
Student-led Climate Advocacy	Reel making competition and biodiversity scavenger hunt enabled creative youth engagement in environmental awareness.
Practical Sustainability Education	Eco Blend webinar equipped students with hands-on knowledge of microgreens and home-based food sustainability.

- **Challenges and Lessons Learned**

Institutional or External Challenges

Challenge Area	Details
Event Scalability and Resources	Expanding hands-on green activities like plantation or waste workshops across the entire student body requires more logistical and financial support.
Limited Long-term Monitoring	Many environmental activities (e.g., plantation drives) lack mechanisms to track long-term growth or carbon capture outcomes.
Cross-departmental Coordination	Climate action events often function in silos (e.g., student clubs, CSR, academic departments), leading to duplication and under-utilization of resources.
Curriculum Integration Gaps	While several departments include sustainability themes, not all programs embed SDG 13 outcomes within assessments or learning goals.

- **Reflections and Improvements Made**

Area of Reflection	Improvement Action Taken / Planned
Sustainability of Green Events	Proposal for annual tree audit and follow-up through student-led environment cells to track plantation growth and survival.
Student Ownership	Events now include student leads (e.g., “Handmade Team”, “Green Warriors”) to foster ownership and continuity of climate initiatives.
Institutional Reporting	Event formats have been standardized to include SDG tagging and outcome metrics, aiding in future impact assessment.

**Blended Learning
Approach**

Webinars such as Eco Blend combine virtual participation with real-life practice (e.g., microgreens), promoting accessible sustainability education.

Manav Rachna University’s SDG 13 efforts during 2023–24 reflect a dynamic mix of grassroots action, sustainable innovation, and climate education. Despite logistical and integration challenges, the university has shown a strong willingness to improve planning, embed climate outcomes institutionally, and empower its students as changemakers. These insights will inform broader and more impactful climate strategies in the coming academic years.

Dr. OP Bhalla Foundation

MEGA PLANTATION DRIVES

The Mega Plantation Drive is an annual initiative conducted by the Dr. O P Bhalla Foundation in partnership with Manav Rachna Educational Institutions and the Manav Rachna Center for Peace and Sustainability. This drive aims to distribute and plant a diverse range of plants and trees in rural areas, government schools, and local community parks, thereby contributing to environmental preservation and mitigating the adverse effects of excessive deforestation. To date, over 25,000 plants have been distributed through this initiative.

Furthermore, participants, referred to as MRites, engage in a green pledge alongside government school students to foster a sense of environmental responsibility and cultivate informed, nature-sensitive individuals. The Mega Plantation Drive is conducted annually in August, with plant donations tailored to meet the specific needs of participating villages and government schools. Annually, approximately 5,000 plants are planted at various community locations, including village panchayats and schools.

Objective

The primary objectives of this drive are:

- To distribute and plant various types of plants and trees in rural areas, government schools, and local community parks.
- To engage students and community members in environmental stewardship by nurturing informed, responsible, and nature-sensitive individuals.
- To fulfill the specific planting requirements of participating villages and schools, ensuring a tailored approach to reforestation efforts.

Impact

Since its inception, the Mega Plantation Drive has made a significant impact on the local environment and community awareness. Key impacts include:

1. **Plant Distribution:** Over 25,000 plants have been distributed, enhancing green cover in various locations. The initiative focuses on indigenous plants that support local biodiversity and ecosystems.
2. **Community Engagement:** By involving students from government schools in tree planting activities and green pledges, the drive fosters a sense of responsibility toward environmental conservation among young individuals.
3. **Enhanced Green Spaces:** The development of green belts, particularly outside the newly developed Off Campus Hostel at Sector 45, Faridabad, contributes to urban biodiversity and improves the aesthetic value of community spaces.
4. **Educational Outreach:** Workshops and discussions led by experts, such as Dr. NC Wadhwa, help raise awareness about the importance of trees and the role of individuals in preserving the environment.

Events

The Mega Plantation Drive has organized several impactful events, detailed below:

- **Annual Plant Distribution Drive (11 July - 12 July)**

During this two-day event, indigenous plants were donated to the Save Aravali Trust and the Eco Club, Faridabad. These plants were subsequently planted across various locations in Faridabad, enhancing local green cover and supporting biodiversity.



Green Belt Development Drive (17 July)

On July 17, the Dr. O P Bhalla Foundation organized a plantation drive to develop the Green Belt outside the newly developed Off Campus Hostel at Sector 45, Faridabad. This event saw enthusiastic participation from Foundation volunteers, volunteers from DSW-MRIIRS, and MRU students.

Key Highlights:

1. Dr. NC Wadhwa addressed the students on the importance of tree plantation, emphasizing the role of trees in environmental sustainability.
2. Participants took a Green Oath, pledging to plant more trees and actively protect the environment.

3. The drive was supported by dignitaries, including the Dean of DSW-MRIIRS and the Deputy Director of MRIIRS, reinforcing the importance of community involvement in environmental initiatives.

Outcome

- The Mega Plantation Drive has yielded several positive outcomes, demonstrating its effectiveness and the commitment of all stakeholders involved:
- Increased Awareness: Participants, including MRites and government school students, have become more aware of environmental issues and are actively participating in sustainability initiatives.
- Sustainable Practices: The planting of approximately 5,000 plants annually at community locations promotes sustainable practices and encourages ongoing environmental care.
- Strengthened Community Bonds: Collaborations among various organizations and institutions have strengthened community ties and fostered a shared vision of sustainability.
- Long-term Environmental Benefits: The initiative is expected to yield long-term benefits, including improved air quality, enhanced biodiversity, and a positive contribution to the local climate.

In conclusion, the Mega Plantation Drive serves as a vital effort toward environmental preservation, community engagement, and education. It not only addresses immediate ecological needs but also instills a lasting sense of responsibility in the younger generation toward nurturing and protecting the environment.

Raddi Recycling & Pustak - Notebook Distribution Drive

Introduction

The Dr. O P Bhalla Foundation in collaboration with MREI has been steadfast in its mission to promote sustainability and recycling of resources. One of its significant initiatives, the "Raddi" project, focuses on recycling waste paper into new notebooks. This project has successfully recycled over 55,000 kgs of paper into usable notebooks.

Event Overview

Event I: Report on the Notebook Donation Event by Dr. O P Bhalla Foundation

Date: 1st May 2024

On 1st May 2024, the Dr. O P Bhalla Foundation, with the support of MR Associates, conducted a noteworthy event at Government Senior Secondary School (GSSS) Bhankri. The Foundation's team donated a total of 8 new notebooks to each of the 385 students at the school made from recycled paper collected through Raddi collection drive. This initiative aimed to

provide essential educational resources as the new academic session commenced, ensuring that all students had access to the necessary materials for their studies.

Details of the Event

- Project: Raddi (Waste Paper Recycling)
- Purpose: Donation of recycled notebooks
- Beneficiaries: 385 students of GSSS Bhankri
- Items Donated: 8 notebooks per student

Conclusion

The Dr. O P Bhalla Foundation remains committed to its goal of sustainability and resource recycling. The recent donation event at GSSS Bhankri is a testament to the Foundation's dedication to supporting education through environmentally responsible practices. The Foundation will continue to work towards similar initiatives, aiming to make a significant impact on both the environment and the community.



Progress Report: Raddi Recycling Initiative

Event -II: Report on Raddi Recycling Initiative Organized by: Dr. O.P. Bhalla Foundation

Date: March 27, 2024

Introduction

The Dr. O.P. Bhalla Foundation is proud to report the ongoing success of its Raddi Recycling Initiative, an environmental sustainability project focused on recycling waste paper from the Manav Rachna (MR) campus. This initiative transforms waste paper into new notebooks, notepads, reams, and other stationery items, promoting sustainable practices and resource efficiency within the campus community.

Initiative Overview:

Objective: To recycle waste paper from the MR campus into usable stationery items, thereby reducing waste and promoting environmental sustainability.

Activities: Collection of waste paper, recycling process, and production of new stationery items.

Recent Progress:

As of March 27, 2024, the Dr. O.P. Bhalla Foundation has successfully processed and recycled a significant amount of waste paper, resulting in the production of 250 reams of A4 size paper. These reams have been submitted to the Central Store for use in various campus activities.

Details of the Recycled Output:

- Recycled Product: 250 reams of A4 size paper
- Recipient: Central Store, MR Campus
- Purpose: To be utilized in various activities and administrative functions within the campus.

Impact

The Raddi Recycling Initiative has a multifaceted impact:

1. **Environmental Benefits:** Reduces the amount of waste paper sent to landfills, lowers the carbon footprint associated with paper production, and conserves natural resources.
2. **Economic Benefits:** Reduces costs related to purchasing new stationery by reusing recycled materials.
3. **Educational Benefits:** Raises awareness among students, faculty, and staff about the importance of recycling and sustainable practices.

Future Goals

- The Dr. O.P. Bhalla Foundation aims to expand the Raddi Recycling Initiative with continued support from faculty and staff members. The foundation plans to:
- Increase the volume of waste paper collected for recycling.
- Develop more types of recycled stationery products.
- Engage the campus community through workshops and awareness programs about the benefits of recycling.

Conclusion

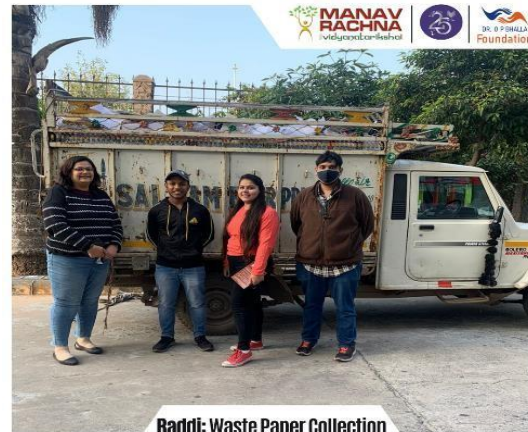
The Raddi Recycling Initiative continues to make a significant impact on the MR campus by promoting sustainability and efficient resource utilization. The Dr. O.P. Bhalla Foundation remains committed to fostering an eco-friendly campus environment and looks forward to the sustained support of the MR community in this endeavor.



Raddi - Recycling Drive

Event III: Raddi - Recycling Drive on 20 January 2023

Team Foundation donated over 1500 kgs of waste materials including newspapers, magazines, books, cardboard and more to Rotaract Club of Faridabad Aravalli under the initiative, Raddi: Waste Paper Collection Drive. The waste material was collected from Swami Vivekananda Library and Resource Centre and the Purchase Department of Manav Rachna Campus. The material would be recycled and converted into new notebooks which will be further donated to the underprivileged kids.



MANAV RACHNA CENTRE FOR PEACE AND SUSTAINABILITY

Plantation Drive

Title: Plantation drive in front of hostel, Sector 21

Date: July 17, 2023

Venue: Sector 21c, Faridabad

On the 17th of July, 2023, a remarkable collaboration unfolded between the Dr. OP Bhalla Foundation and the Centre for Peace and Sustainability, culminating in a spectacular plantation drive at Sector 45, Faridabad. This eco-centric initiative took root just outside the newly inaugurated Off Campus Hostel, as volunteers from the Foundation, the MRCPS, and passionate students from DSW-MRIIRS and MRU converged to create a vibrant Green Belt in the heart of the community.



The day was not only marked by the physical act of planting trees but also by an uplifting address from Dr. NC Wadhwa, whose words resonated with the gathering. His insightful discourse emphasized the paramount significance of Tree Plantation, inspiring all present to take a heartfelt Green Oath—a commitment to nurturing our planet and safeguarding its precious environment.



The event was graced by esteemed personalities, including the Dean-DSW-MRIIRS, Dy. Director - MRIIRS, and the dedicated Team Foundation. Their presence added an extra layer of significance to the occasion, reinforcing the collective commitment towards a greener, sustainable tomorrow. As we march forward together on this journey, let's carry the spirit of

tree planting and environmental stewardship with us. Together, through such initiatives, we can continue to make a positive difference in the world around us.

Sustaini-verse reel competition on nature

Title: Sustaini-verse reel competition on nature

Date: August 13, 2023

From August 10th to 13th, 2023, the Manav Rachna Centre for Peace and Sustainability (MRCPS) orchestrated a noteworthy event titled "SustainiVerse: Reel Making Competition for fostering Peace & Sustainability." This unique competition, held with the theme "Peace & Sustainability," provided a creative platform for individuals to use short video reels as a medium to promote eco consciousness, global peace, and unity.

The competition aimed to inspire participants to channel their creative talents toward producing compelling video reels that convey the significance of peace and sustainability. These reels were designed to raise awareness and motivate positive action, contributing to the creation of a more environmentally responsible and harmonious world.

SustainiVerse showcased its commitment to empowerment by leveraging social media, intending to feature selected entries on MRCPS's official Instagram handle on August 14th. The winner would be determined based on the engagement received through likes and comments until midnight on August 16th, fostering a global connection and a sense of shared purpose.

In addition to the recognition of creative efforts, SustainiVerse offered participants the opportunity to earn "CLAN POINTS FOR ALL," introducing a friendly competitive element that encouraged teamwork and made the event more engaging and enjoyable. The top three winning entries were promised exciting prizes, while all participants would receive a certificate of participation, acknowledging their valuable contribution.

In conclusion, the SustainiVerse Reel Making Competition emerged as a remarkable initiative by MRCPS, emphasizing the power of creative expression in contributing to the causes of peace and sustainability. By fostering unity and inclusivity, the event conveyed the message that building a better, more sustainable world is a collective responsibility, with every individual capable of making a meaningful difference. The competition's emphasis on community, recognition, and engagement marked a significant step towards a greener and more harmonious future.

Sustainable Christmas- showcasing sustainable christmas tree

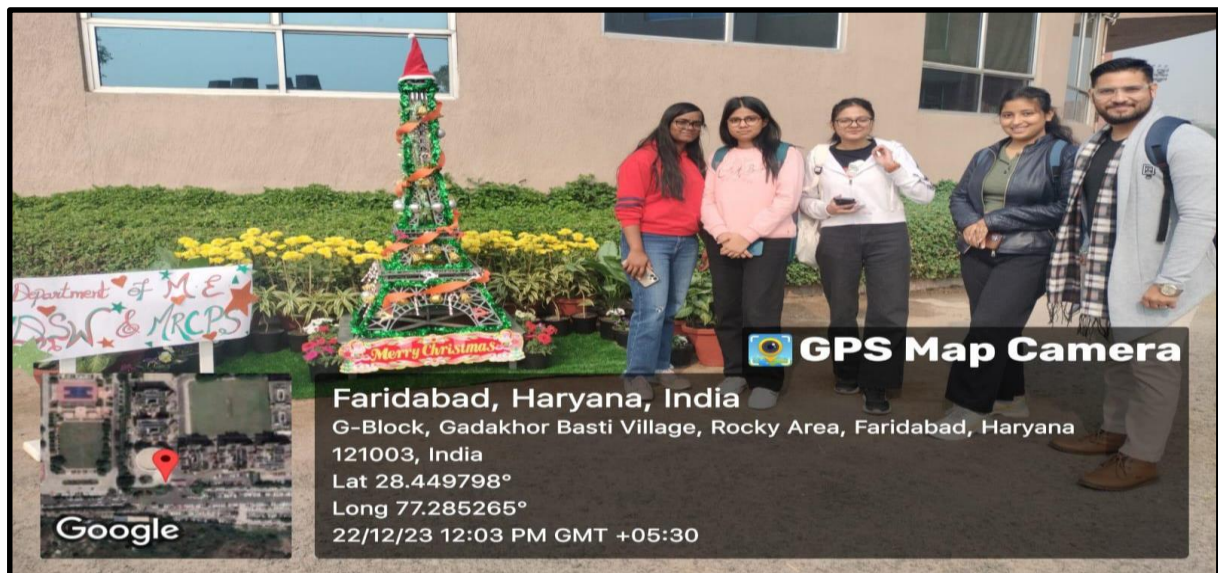
Title: Sustainable Christmas- showcasing sustainable christmas tree

Date: December 22, 2023

Venue: In front of G block, Manav Rachna University

In a unique and eco-conscious celebration of Christmas, Manav Rachna University went beyond traditional festivities and embraced sustainability. The Department of Mechanical Engineering at Manav Rachna University took a pioneering step by crafting a Christmas tree made entirely of iron material, showcasing their commitment to environmental consciousness. This sustainable model, a collaborative effort of the university's mechanical engineering department and the Manav Rachna Centre for Peace and Sustainability, became a symbol of innovative and green celebrations.

To engage the student community and spread awareness about sustainable practices, the Manav Rachna Centre for Peace and Sustainability, in collaboration with the Department of Student Welfare, exhibited the iron Christmas tree adorned with festive decorations. The exhibition aimed to encourage students to interact with the creators, fostering a dialogue about sustainable futures. Additionally, it provided an educational platform for students to understand the significance of Sustainable Development Goals (SDG) 7 and SDG 11, emphasizing the importance of clean energy and sustainable cities. This initiative not only brought a refreshing twist to Christmas celebrations but also instilled a sense of responsibility towards the environment and the broader global goals of sustainable development.





DSW ISR

Title: Plantation Drive

Date: July 17, 2023

Venue: Sector 21c

No. of participants: 6

Purpose of the Event:

The aim of the collaborative plantation drive at Sector 45, Faridabad, was to foster a greener, sustainable tomorrow by uniting volunteers from the Dr. OP Bhalla Foundation, MRCPS, and students from DSW-MRIIRS and MRU in creating a vibrant Green Belt.

About the event:

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The event was graced by esteemed personalities, including the Dean-DSW-MRIIRS, Dy. Director - MRIIRS, and the dedicated Team Foundation. Their presence added an extra layer of significance to the occasion, reinforcing the collective commitment towards a greener, sustainable tomorrow. As we march forward together on this journey, let's carry the spirit of tree planting and environmental stewardship with us. Together, through such initiatives, we can continue to make a positive difference in the world around us.

Title: World Environment Day

Date: September 1, 2023

Venue: Moujpur Village, Faridabad

Time: 10:00 A.M.

Purpose of the Event:

To address pressing environmental issues prevalent within the community. Recognizing the urgency of these concerns, the event sought to galvanize individuals to take tangible actions towards environmental stewardship and sustainability. Through a variety of engaging activities and initiatives, the event aimed to instill a sense of collective responsibility and empower participants to play an active role in preserving and protecting their natural surroundings.

About the Event:

On September 1, 2023, MSC Public School in Moujpur Village, Faridabad, successfully brought together the community to address pressing environmental issues. Through a combination of tree plantation, awareness workshops, clean-up campaigns, cultural programs, and an exhibition, the event not only educated but also inspired individuals to take positive actions for a greener and healthier planet. The commitment demonstrated by all participants is a testament to the potential for positive change when communities unite for a common cause. **Event Overview:** The event organized by MSC Public School encompassed a multifaceted approach towards addressing environmental issues. It featured a series of activities including tree plantation drives, awareness workshops, clean-up campaigns, cultural programs, and an exhibition. These diverse components were meticulously planned to engage participants of all ages and backgrounds, fostering a sense of unity and purpose within the community.

Tree Plantation Drive: One of the central pillars of the event was the tree plantation drive, where participants actively contributed to increasing green cover in their locality. Under the guidance of environmental experts and volunteers, numerous saplings were planted, symbolizing a collective commitment to combatting deforestation and promoting biodiversity. **Awareness Workshops:** The event also included informative workshops aimed at educating attendees about various environmental issues and sustainable practices. Topics such as waste management, renewable energy, and conservation strategies were explored, empowering individuals with the knowledge needed to make informed choices in their daily lives.

Clean-up Campaigns: To address the immediate environmental challenges facing the community, clean-up campaigns were organized in public spaces and water bodies.

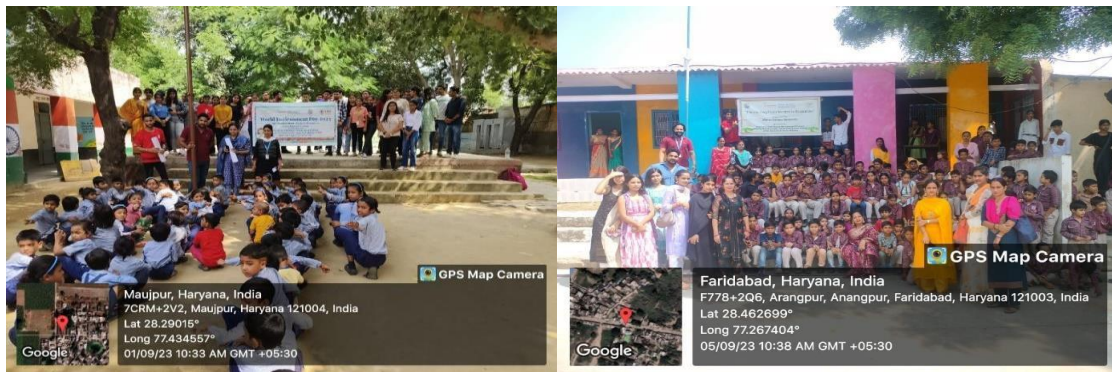
Participants enthusiastically volunteered to remove litter and debris, restoring the natural beauty of their surroundings while instilling a sense of responsibility towards waste management and pollution prevention.

Cultural Programs and Exhibition: In addition to educational activities, the event featured cultural programs showcasing traditional performances and artistic expressions celebrating

nature and environmental stewardship. Furthermore, an exhibition was curated to showcase innovative solutions and success stories in environmental conservation, inspiring attendees with practical examples of positive change.

Impact and Conclusion: The collective efforts of MSC Public School and the community yielded tangible results, fostering a spirit of collaboration and activism towards environmental sustainability. Participants emerged not only enlightened but also inspired to take concrete actions towards preserving our planet for future generations. The success of this initiative serves as a testament to the transformative power of community-driven initiatives in addressing pressing environmental challenges.

In conclusion, MSC Public School's event on September 1, 2023, stands as a shining example of community action for environmental sustainability. By bringing together diverse stakeholders and fostering a culture of environmental responsibility, the initiative has laid the foundation for a greener and healthier future for Moujpur Village and beyond.



Teaching about Environment and Nature



Students celebrating World Environment Day at village school to spread awareness in communities

PATENTS

Lightning Protection System for Rooftop Solar PV Panels

Dinesh kumar sharma, Ananna Bardhan, Raj Kumari, Prashant Kumar	202311060466A
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A safety mechanism that shields solar panels from lightning damage. Incorporates conductive pathways and surge protection components. Automatically redirects lightning energy to ground safely. Prevents costly damage and ensures continuous solar operation.

Erosion Protection System for Solar PV Panels

Dinesh Kumar Sharma	202311072581
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A surface protection system to prevent erosion and wear on panels. Uses nanocoating and sensor-based feedback for early detection. Extends panel lifespan under harsh environmental conditions. Maintains solar efficiency and reduces maintenance costs.

Portable Environment Data Monitoring Box

Dr. T. V. Attar, Dr. Piyush Charan, Dr. Anupam Das, Dr. Vitthal T. Mohite, Dr. Vishnu Kumar Saxena, Dr. Shashank Pushkar	390497-001
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A handheld box equipped with sensors for air and weather data. Measures temperature, humidity, CO₂, and particulate matter. Stores and transmits readings for research and field use. Helps assess local environmental and pollution conditions.

Analysis and Management of Overload Protection of EV Batteries

Dr. Anthati Sreenivasulu, Dr. M Pala Prasad Reddy, Dr. Piyush Charan, Prof Dr. Jyoti Prasad Patra, Dr. Manasi V. Ghamande, M Rambabu, Roshan Kisan Bonde, V.S.B. Engineering College, Dr.P.ARULKUMAR, Rashi Goswami Anand Goswami, Dr. Maaz Allah Khan	202341036797
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A system ensuring safe energy distribution in electric vehicle batteries. Detects overloads, temperature spikes, and voltage imbalance. Applies AI algorithms for preventive maintenance and balancing. Improves battery life, safety, and eco-friendly transport performance.

Instant Shading Box

Ms. Sunita Joshi, Dr. Yogendra Kumar Awasthi, Neerja Negi, Dr. Yogita Khanna, Aniket Singh, Nikhil Dutt, Niharika Thakur, Muskan Jain, Nidhi Bhuttan	366635-001
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A portable mechanical device that unfolds automatically to provide shade. Uses sensors to detect sunlight intensity and deploy shade panels. Lightweight, collapsible, and easy to transport. Ideal for outdoor workers, travelers, and emergency use.

INNOVATION & INCUBATION CENTRE

Report on Environment Day Celebration

On June 5, 2024, Manav Rachna University (MRU) celebrated World Environment Day with a special focus on the Ek Ped Maa Ke Naam campaign, a nationwide initiative launched by Prime Minister Narendra Modi. This year's Environment Day was dedicated to encouraging people to plant at least one tree as a gesture of gratitude toward Mother Earth, symbolizing the nurturing nature of both the planet and motherhood. In his address, Prime Minister Narendra Modi urged every citizen to participate in the Ek Ped Maa Ke Naam campaign by planting a tree and nurturing it as a lifelong commitment. He emphasized that this act of planting is not only a tribute to Mother Earth but also a powerful step toward environmental conservation. His call to action resonated with participants across the country, encouraging collective efforts to enhance green cover and preserve the environment for future generations.

MRU wholeheartedly embraced the Prime Minister's initiative by organizing a large-scale plantation drive on campus. Students, faculty, and staff participated in the drive, planting a wide variety of saplings, including neem, peepal, and fruit-bearing trees. Each participant dedicated their sapling to their mother, reflecting the emotional connection and the campaign's essence of nurturing life. Alongside the plantation drive, MRU organized an awareness campaign aimed at educating students and the community about the critical role of trees in combating climate change, improving air quality, and preserving biodiversity. Posters, banners, and presentations highlighted the significance of tree plantation and urged everyone to adopt sustainable practices in their daily lives.

The Environment Day celebration at Manav Rachna University was a resounding success, reinforcing the institution's dedication to environmental sustainability. Under the leadership of Prime Minister Narendra Modi's Ek Ped Maa Ke Naam campaign, the university community actively participated in tree plantation and awareness activities, contributing to a greener and healthier future. This initiative serves as a reminder that small acts of kindness toward nature can lead to significant environmental impact over time.



Report on Academic visit to IIT Delhi

The School of Sciences, Program Mathematics, Manav Rachna University in collaboration with IIC, MRU organized an Academic visit to IIT Delhi Campus on 25th January 2024, from 9:30 a.m. onwards for the UG and PG students and the faculty members.



The Academic visit was divided into three phases, the first phase was the interaction with P.G and Ph.D. scholars of IIT Delhi, the second phase was the expert lecture by Prof. R.K. Sharma and the third phase was the visit to the Central Library.

At around 10:30 a.m., a brief introduction of IIT Delhi and its cutting-edge research, academic facilities, and opportunities available at one of India's premier institutions was

given by an undergraduate student. Our students participated in insightful discussions with their P.G. students and Ph.D. scholars, gaining valuable insights into ongoing projects and research areas.

At 11:30 p.m., Prof. R. K. Sharma delivered the talk on “One Small Theorem and Big Application”. The talk was very interactive, focusing on the importance of information security. He started his talk by introducing numbers and their importance in our lives. Dr. Sharma explained how number theory plays a significant role in our lives and how it forms the basis of cryptography. Dr. Sharma also mentioned how we are prone to security breaches while using the internet and suggested the usage of adequate measures to protect our personal information.

Around 2:00 p.m., all students along with faculty members visited the central library. One faculty member from IIT Delhi assisted and demonstrated the different online services available at the central library. She also informed us about the different types of journals available in the library.

Students were very excited to explore the different sections of the library. They also visited the repository sections.

The visit facilitated networking among students from different academic backgrounds, creating a platform for interdisciplinary collaborations.

HackItUp 1.0

Manav Rachna School of Data and Computing (MRSDC) organized *HackItUp 1.0*, a 12-hour hackathon designed to ignite innovation and problem-solving among budding technologists. The event witnessed enthusiastic participation from multiple teams across disciplines, showcasing creativity and technical expertise in diverse domains.

Among the standout performers, **Team Shinchan** secured the **3rd Prize** □ for their remarkable project titled *Crop Prediction Management*. The project aimed to revolutionize the agricultural landscape through the integration of data analytics and predictive modeling. *Crop Prediction Management* leverages advanced algorithms to forecast crop yields, enabling farmers to make informed decisions for efficient and sustainable farming. The solution underscores the role of technology in strengthening the agri-tech ecosystem by promoting data-driven agricultural practices.

The team comprised **Harsh Bhardwaj (2nd Year, CSE 4A)** as Team Leader, along with **Swayam Arora (2nd Year, CSE 4A)**, **Chhaya Sharma (1st Year, CSE 2C)**, and **Khushboo Mehta (1st Year, CSE 2C)**. The competition commenced with an online idea submission phase, followed by an intense 12-hour in-person hackathon where participants transformed their concepts into working prototypes. Team Shinchan's innovative approach, teamwork, and problem-solving capabilities impressed the judges, earning them the 3rd position among several competitive entries.

The achievement of Team Shinchan reflects their dedication, creativity, and strong coding acumen. Their success highlights the value of collaboration and innovation nurtured within the Manav Rachna ecosystem. The project holds promising potential for further development and real-world implementation in the field of smart agriculture.

Team Shinchan's accomplishment at HackItUp 1.0 demonstrates how young technologists can contribute meaningfully to solving real-world challenges. Their *Crop Prediction Management* solution stands as a testament to the university's commitment to fostering innovation, interdisciplinary learning, and societal impact through technology.



Report on ATVC

Under MRU-IIC a team of nine students from a university participated in the Aravalli Terrain Vehicle Championship (ATVC) from 1st March to 5th March 2024. The team designed and fabricated a vehicle in the Fabrication Centre, which was funded with Rs. 5,70,000 from the university. The team was led by Mr. Mohit Sanju and Mr. Rajveer Singh Bedi, under the guidance of Dr. J P Sharma and Dr. Prashant Bhardwaj.



The team designed and fabricated a rugged off-road vehicle that was capable of navigating rough terrain. The vehicle was designed to be lightweight yet durable, with a powerful engine and high ground clearance. The team utilized the latest CAD/CAM software to design the vehicle and utilized various fabrication techniques to build the chassis, suspension, and other components. The team also designed and fabricated the steering, braking, and other systems, ensuring that they were safe and reliable.

The team extensively tested the vehicle in various conditions to ensure that it was capable of handling any challenge that came its way. The team tested the vehicle's acceleration, braking, steering, and suspension, making adjustments and improvements where necessary. The team also tested the vehicle's stability and safety, ensuring that it was safe for the driver and passengers.

The team participated in the Aravalli Terrain Vehicle Championship, where they competed against other teams from different universities. The competition was held over five days, with various events such as acceleration, endurance, and maneuverability. The team performed well in all the events, demonstrating the vehicle's capabilities and the team's skills. Team acquire 9th position in the initial round at National Level hosted by Nutan Maharashtra Institute of Engineering and Technology, Talegoan and Orison Education India Ltd. This is a National Level Education and Innovation Festival to promote Skill India, Startup India, Go Green and Make In India. In this event, more than 100 teams participated with over 3500 participants with an ensemble of engineering undergraduates and diploma holders from various recognized institutes.

Overall, the team of nine students from the university performed exceptionally well in the Aravalli Terrain Vehicle Championship. The vehicle designed and fabricated by the team was rugged, reliable, and capable of navigating rough terrain. The team's performance in the competition demonstrated their skills and expertise in design, fabrication, and testing. The team's mentors, Dr. J P Sharma and Dr. Prashant Bhardwaj, provided valuable guidance and support throughout the project, ensuring that the team was successful in their endeavor.

Innovathon 2023

A team of students from the **Department of Computer Science and Technology (DoCST)**, Manav Rachna University, participated in **Innovathon 2023** organized by **Amity University, Gurugram** on **2nd–3rd November 2023**. The team, comprising **Tejas Singh, Vansh Aggarwal, Ayush Sachdeva, and Kartik Dargan**, secured the **2nd position** in this prestigious innovation competition. The team worked under the mentorship of **Dr. Parneeta Dhaliwal**, Department of Computer Science and Technology.

The students presented their project titled **“Revolutionising Waste Segregation using Deep Learning and Robotic Arm”**, which integrates artificial intelligence and robotics to automate the waste segregation process. The solution utilizes **deep learning algorithms** to accurately identify and classify different types of waste, while a **robotic arm mechanism** ensures efficient sorting into respective categories. This innovation aims to address environmental and waste-management challenges by enhancing efficiency, reducing human intervention, and promoting sustainability.

The project was highly appreciated for its **technical innovation, real-world applicability, and societal impact**, earning the team a **cash prize of INR 50,000**. Innovathon 2023 provided a platform for young innovators to present creative solutions to pressing global issues through technology-driven ideas.

The success of the team reflects the strong culture of innovation and experiential learning fostered by the **Institution’s Innovation Council (IIC)** at Manav Rachna University. The university continues to encourage students to explore interdisciplinary technologies that contribute to sustainable and inclusive growth.



Innovathon'23 (Different team as per above details)

A team of students from the **Department of Computer Science and Technology (DoCST)**, Manav Rachna University, participated in the **Innovathon'23 Hackathon** held at **Amity University, Gurugram** on **2nd–3rd November 2023**. The team, comprising **Tejwant Singh, Shreya Marwaha, and Sneha Kumari**, represented the **Institution's Innovation Council (IIC)** of the university and secured a place among the **Top 10 teams** out of a total of **97 participating teams** from across the country.

The team presented an impactful project titled **“Empowering Sustainable Practices: A Comprehensive Platform for Carbon Footprint Reduction and Eco-Mentorship.”** The project aimed to promote environmental sustainability by offering users personalized tools to monitor, reduce, and offset their carbon footprint. Additionally, the platform connects individuals with sustainability experts and eco-mentors, fostering community-driven green initiatives and responsible practices.

The innovation was recognized for its **strong alignment with global sustainability goals**, combining technology, education, and environmental awareness to encourage climate-conscious behavior. The project demonstrated the team's creativity, technical competence, and commitment to developing digital solutions for environmental challenges.

Participation in **Innovathon'23** provided the students with an opportunity to collaborate, ideate, and showcase their innovative ideas before industry experts and academic mentors. Their selection among the top-performing teams reflects the university's focus on nurturing **innovation, sustainability, and experiential learning** under the **IIC framework**.

