SDG 13: Climate Action

Take urgent action to combat climate change and its impacts

INTRODUCTION

Climate action in grounds, classrooms and laboratories

Sustainable Development Goal 13 calls for urgent action to combat climate change and its impacts. It asks every kind of institution to reduce greenhouse-gas emissions, to strengthen resilience and the capacity to adapt to climate-related hazards, and to improve education, awareness and institutional capacity on climate mitigation and adaptation. Universities have a particular part to play: they educate the people who will design low-carbon societies, generate the evidence on which sound climate policy rests, and show through their own grounds and habits what responsible practice looks like.

SRM University-AP follows this goal in principle through three connected strands. On campus, it keeps its grounds green and takes part in greening and community plantation drives. In the classroom and beyond, it builds climate literacy through courses, expert talks, webinars and outreach events that bring students, faculty and visitors together. In its departments and laboratories, it supports scholarly research on carbon, emissions, climate processes and climate-related policy. The pages that follow describe each strand.

> **Universities educate the people who will design low-carbon societies, generate the evidence behind sound climate policy, and show through their own grounds what responsible practice looks like.**

SDG 13 DATA AND KEY HIGHLIGHTS

Campus land, green cover and trees

93.7
acres of total campus land
2024-25

13.5
acres of green-covered area
Lawn, trees and hedges · about 14% of campus land

800
mature trees on campus (older than 10 years)
Approximate number

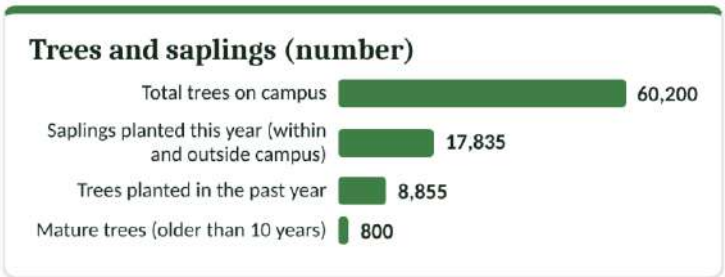
17,835
saplings planted this year
Within and outside campus

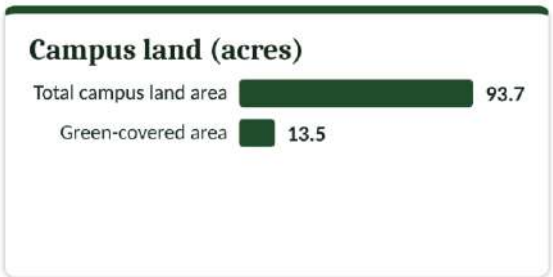
60,200
trees on campus

8,855
trees planted in the past year

7
climate-related events and webinars
24 Aug 2024 – 28 Mar 2025

95
SDG 13 publications
2024–2025





CLIMATE ACTION ON CAMPUS

Green cover as climate action

Green cover is the campus's own contribution to climate action: trees, hedges, lawns and plantings that shade walkways and roadsides and hold carbon in living biomass. The photographs below show the planted grounds across the campus; the measured figures for land area, green cover and tree counts appear in the highlights above.



Palm trees and low shrubs in a planted bed beside a curved paved road, with a multi-storey building behind.



A paved avenue lined with trees and palms on both sides.



Palms and trees beside a multi-storey building; orange traffic cones stand on the paved road.



Palm plants growing in a soil bed beneath a covered structure.



Dark-leaved ornamental plants in the foreground, with trees and a building wall behind.



A grass strip with a young tree and a clipped hedge beside a paved path; a concrete cover sits in the lawn.



A walkway of stone slabs with grass, trees and palms alongside.



Trees and plantings beside a paved path, with green mesh fencing and a tree guard visible.

CLIMATE EDUCATION AND AWARENESS

Climate literacy in the curriculum

Climate literacy begins in the curriculum. Of the environmental courses offered, two carry climate change in their titles: one in the ODD semester and one in the EVEN semester. Together they place the science, policy and urban dimensions of climate change in front of students across programmes.

Awareness extends beyond the classroom through seminars, webinars, conferences and outreach activities, described in the next section.

COURSES ADDRESSING CLIMATE CHANGE

Semester	Code	Course name
ODD	**EVS 501**	**Environmental Issues, Climate Change, and Sustainable Development**
EVEN	**LBA 251**	**Sustainable Cities and Climate Change**

EVENTS AND COMMUNITY OUTREACH

Plantation, lectures, webinars and conferences

EVENTS AT A GLANCE

Event	Date	Format	Participants
Prerana Vanam tree plantation on Founder's Day	24 Aug 2024	Extension / outreach	27
Spatial Reflections Webinar climate change and the Amazon rainforest	15 Oct 2024	Webinar (online)	98 unique users
Spatial Reflections Webinar satellite-based vegetation monitoring	28 Oct 2024	Webinar (online)	144 unique users
Lecture on Disaster Relief and Management	9 Nov 2024	Lecture / training	201
Spatial Reflections Webinar urban climate	27 Nov 2024	Webinar (online)	45 unique users

Event	Date	Format	Participants
Water Elixir Meet (WE Meet) 2025	27 Feb – 1 Mar 2025	International conference	277
Environmental Sustainability Exhibition (ESE-2025)	28 Mar 2025	Technical event	202 UG students from eleven states

Prerana Vanam – Tree Plantation on the Occasion of Founder's Day

24 Aug 2024 · 10 am – 1 pm · Amaravati, Andhra Pradesh · Participants: 27

Organiser: Directorate of Student Affairs

Category: Social service · NSS

Level: Intra-University

Participants: 27 (9 faculty and 18 UG)

A tree-plantation drive organised by the Directorate of Student Affairs in celebration of Founder's Day. Students, faculty and staff came together at a planting site in the nearby area, where they planted a variety of trees and shrubs.

It had three aims: to enhance local greenery and the quality of the surrounding area; to promote environmental sustainability, noting the role of trees in combating climate change, reducing air pollution and conserving water; and to engage the university community in a shared effort towards environmental stewardship.



Tree plantation: two people at the planting site, with the "Prerana Vanam – Founder's Day" banner behind them.



Tree plantation: three people around a young sapling; one holds a watering can.


Tree plantation: a group gathered around a sapling in a circular planting bed.

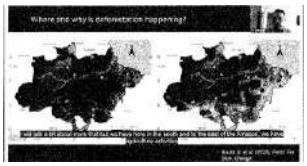

Tree plantation: several people crouched around a planting spot.

Climate Change and the Amazon Rainforest: A Two-Way Street

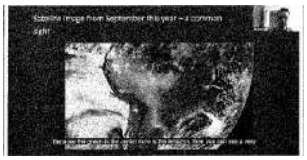
15 Oct 2024 · 4 pm – 5 pm · Online (Zoom) · Centre for Geospatial Technology · Participants: 98 unique users

Speaker: Prof. Micael Amore Cecchini, University of São Paulo, Brazil

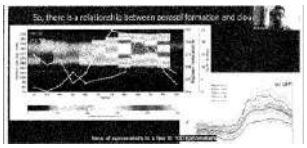
The speaker discussed how anthropogenic causes such as deforestation, aerosol deposition, pollution and land-use change affect the dynamics of the Amazon forest, with pressures spreading beyond the south and east of the Amazon. The session concluded that better climate projections depend on a better understanding of gas–aerosol–cloud cycles over the rainforest.



Slide with two maps and the on-screen heading "Where and why is deforestation happening?"



Slide with a satellite image and the on-screen text "Satellite image from September this year – a common sight".



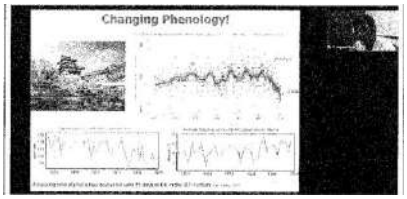
Slide with line-graph panels and the on-screen text "there is a relationship between aerosol formation and cloud…".

Satellite-Based Vegetation Growth Condition and Resilience Monitoring

28 Oct 2024 · 11:30 am – 12:30 pm · Online (Zoom) · Centre for Geospatial Technology · Participants: 144 unique users

Speaker: Prof. C. Jeganathan, Birla Institute of Technology, Mesra

The webinar addressed the potential of increasing India's forest cover towards climate change resilience. It covered stages of phenological development in forest communities, citizen-science initiatives that document phenological change, and how climate change could trigger shifts in the onset and length of phenophases, with a satellite-based study of crop productivity patterns in the Kosi region of Bihar.



Slide titled “Changing Phenology!” with an image and line-graph panels.


Slide showing a map of India with scattered dark markings.

Lecture on Disaster Relief and Management

9 Nov 2024 · 3 pm – 5 pm · Theatre and Grand Stairs · Participants: 201

Resource person: Mr N. Gopalakrishna, NDRF

Host: NSS · Directorate of Student Affairs

Participants: 201 (5 external, 70 faculty/staff, 126 UG)

A lecture hosted by the NSS in which a resource person from the National Disaster Response Force (NDRF) spoke on disaster relief and management. The programme aimed to build understanding of why disaster management matters, the role of the NDRF in emergency response, and the skills needed for community involvement in disaster preparedness and response.


Disaster Relief Demonstration: an inflatable boat on the floor with people standing around it.


A speaker at a lectern beside a large projected slide showing a cycle diagram.


Audience seated in an auditorium.


People standing in a row behind an inflatable boat.

Urban Climate: Through the Lens of Geospatial Technology

27 Nov 2024 · 2:30 pm – 3:30 pm · Online (Zoom) · Centre for Geospatial Technology · Participants: 45 unique users

Speaker: Dr Asfa Siddiqui, Indian Institute of Remote Sensing, ISRO

The speaker introduced datasets on urban planning and explained how night-time lights serve as a proxy for urban sprawl, with a focus on New Delhi. She discussed the urban heat island effect and the rise in land surface temperature from 1993 to 2011 due to anthropogenic climate change. A Dehradun case study and recommendations on transport systems, building design, pollutant measurement and action plans closed the session.



Map panel titled “Urban growth near airport – 1993”.



Map panel titled “Urban growth near airport – 2013”.

Water Elixir Meet (WE Meet) 2025 – International Conference

27 Feb – 1 Mar 2025 · 9 am – 5 pm daily · SRM University-AP · Host: Dept. of Environmental Science and Engineering

Chief guest: Prof. Rajasekhar Balasubramanian, National University of Singapore

Participants: 126 external · 27 faculty · 106 PhD scholars and others · 7 PG · 11 UG

An international conference that brought together researchers, engineers and policymakers around water-centred environmental issues, including water scarcity, pollution and climate change impacts. Keynote sessions by three foreign delegates and six national experts covered climate-resilient water systems, membrane separation, digital innovations and community-led water stewardship.

Outcomes included a compendium of research abstracts and a policy brief, and strategic partnerships between academic institutions, industries and policy bodies on challenges such as PFAS contamination, saltwater intrusion and circular water economies.


A person standing in front of wall-mounted display panels in a seminar room.


A large hall with a projected screen on the stage and rows of seats in the foreground.


Participants seated at long tables in a conference room.


A stage with a banner reading “1st Water Elixir Meet (WE Meet) 2025”; two people stand on the stage.

Environmental Sustainability Exhibition (ESE-2025)

28 Mar 2025 · 8:30 am – 5:30 pm · APJ Abdul Kalam Auditorium · Host: Dept. of Environmental Science and Engineering

Organisers: Dept. of Environmental Science and Engineering with the Directorate of Admissions

Participants: 207 external · 5 faculty · 202 UG

A technical event that gave undergraduate students a platform to showcase models, posters and projects on environmental sustainability. It drew 202 undergraduate students from eleven states, with exhibits spanning agriculture, biotechnology, electronics and computer science.

Its objectives were to inspire young minds to develop practical solutions for environmental sustainability, to create a platform for knowledge sharing and collaboration, and to promote the university as a hub for advanced research and education in the environment and sustainability.


Large group seated on the tiered steps of an auditorium, facing the camera.


Participants seated in a hall, with sofas in the foreground and a person standing.

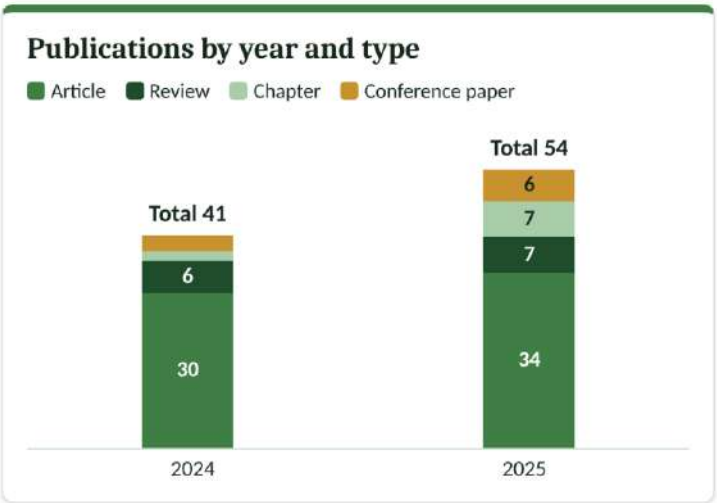

Two people at a podium beside a large projected screen on a stage.

RESEARCH AND PUBLICATIONS

SDG 13 research, 2024–2025

SRM University-AP has 95 publications mapped to SDG 13 for 2024 and 2025, with a Field-Weighted Citation Impact of 1.52. Of these, 41 have international co-authors.





43.2%

International collaboration

41 of 95 publications

2.1%

Academic–corporate collaboration

Publications with both academic and corporate affiliations

TOP KEY PHRASES

Carbon Dioxide Reduction · Life Cycle Analysis · Carbon Footprint · India · Biogas · Carbon Dioxide · Waste Management · Microalgae · Phthalocyanine · Anthropogenic Effect · Aquaculture System · Climate Modeling · Exclusive Economic Zone · Real Time · Solar Power

RESEARCH THEMES IN THE SELECTED PAPERS

Greenhouse gases and carbon cycling

Methane oxidation and emissions in tropical rivers and aquaculture ponds; carbon dioxide in a South Asian river basin; greenhouse-gas impacts of shrimp feed.

Carbon storage and sequestration

Carbon storage in a coastal wetland; biomass and carbon sequestration in a protected area; afforestation in industrial greenbelts; microalgae as a negative-emission technology.

Decarbonisation, climate risk and policy

Decarbonising sponge iron industries; drought-prone regions under climate change in India; India's Panchamrit climate policy.

SELECTED PUBLICATIONS

#	Title, authors and DOI	Year	Type	FWCI
1	**Linking carbon storage with land use dynamics in a coastal Ramsar wetland** Dar, S.A. et al. · DOI 10.1016/j.scitotenv.2024.173078	2024	Article	1.21
2	**Environmental determinants of aerobic methane oxidation in a tropical river network** Patel, L. et al. · DOI 10.1016/j.watres.2024.122257	2024	Article	1.16
3	**Urbanization Drives Carbon Dioxide Supersaturation in South Asian River Networks: Insights from the Krishna River Basin, India** Singh, R. et al. · DOI 10.1021/acsestwater.4c00947	2025	Article	1.35
4	**Salinity and phosphorus as key regulators of methane emissions in tropical aquaculture ponds** Patel, L. et al. · DOI 10.1007/s10499-025-01984-z	2025	Article	0.97
5	**Environmental impacts and effects on greenhouse gas emissions in shrimp feed production system for aquaculture – A case study in India** Ramesh, P. et al. · DOI 10.1016/j.envres.2023.117348	2024	Article	1.25
6	**Sustainability performance of microalgae as a negative emission technology for wastewater treatment** Gowd, S.C. et al. · DOI 10.1016/j.jwpe.2025.107393	2025	Article	1.33
7	**Species Diversity, Biomass Production and Carbon Sequestration Potential in the Protected Area of Uttarakhand, India** Upadhyay, G. et al. · DOI 10.3390/plants14020291	2025	Article	1.41
8	**Systematic evaluation of industrial greenbelts for quantifying carbon sequestration potential of afforestation activities** Raval, N.P. et al. · DOI 10.1007/s10661-025-14559-5	2025	Article	0.2
9	**Pathways for decarbonizing the sponge iron industries: Effect of energy balance and impact assessment** V. S, V. et al. · DOI 10.1016/j.jclepro.2024.141962	2024	Article	0.95

#	Title, authors and DOI	Year	Type	FWCI
10	**Foreseeing drought-prone regions in India under climate change: a comprehensive analysis through the development of Drought Prone Index** Tayyaba, S. et al. · DOI 10.1007/s10661-025-14324-8	2025	Article	0
11	**Climate commitments and democratic contradictions: India's Panchamrit policy in comparative south Asian perspective** Thomas, V. et al. · DOI 10.1080/14693062.2025.2596754	2025	Article	0

CONCLUSION

Progress towards climate action

Across its grounds, classrooms, events and laboratories, SRM University-AP's contribution to SDG 13 is visible in four places. The campus keeps measured green cover and tree stock, set out in the highlights. Climate-focused courses and a run of webinars, lectures, a plantation drive and conferences in 2024-25 carry climate knowledge to students and visitors. And the university's output under SDG 13 for 2024 to 2025 spans carbon cycling, sequestration, decarbonisation and climate policy.

Taken together, these strands show climate action pursued through awareness, campus practice and research.