Centurion University
Shaping Lives...
Empowering Communities...

EDUCATIONAL PROGRAMMES ON ECOSYSTEMS

Centurion University of Technology and Management (CUTM) offers educational programmes on ecosystems, wild flora, and fauna for university students, schoolchildren, villagers in districts surrounding its campuses, farmers, tribal communities, and national audiences through seminars and conferences. These initiatives include workshops on insects, pollinators, and medicinal plants; snake rescue and wildlife awareness programmes; an international GIS conference on protected-area zoning; plantation-based environmental education in village schools; and field-based training for farmers. CUTM's campus serves as a living classroom for biodiversity education and ecosystem conservation, featuring 434 recorded wild animal species, 4,195 trees representing 80 species, and Pollinator Paradise, a pollinator garden recognised at the International Green Gown Awards 2025.

2025 at a Glance

- **Programmes:** 27 ecosystem education programmes and events held between January and December 2025.
- **Participants:** 1,222 people participated across 19 programmes.
- **Communities reached:** university students, school children and teachers, villagers and Gram Panchayat volunteers, farmers including tribal farmers, NSS and Youth Red Cross volunteers, and national and international conference delegates.
- **Partners:** Esri India, the Indian Society of Geomatics, CSIR–IMMT, ICAR–IISWC, Harsha Trust, CCD, the Missiorer project, Kusumati Chhanaghara Gram Panchayat and NMAET–ATMA.
- **Living learning resources:** 434 wild animal species, including the King Cobra (Vulnerable) and Indian Rock Python (Near Threatened); 52 bird species in 32 families; 4,195 trees of 80 species.

1. Ecosystem Education Programmes in 2025

Table 1: Ecosystem education programmes, January–December 2025

Programme	Date	Organiser / partner	Audience	Participants
Plantation and habitat education, Terrace Orchard, Ranadevi	31 Jan 2025	NSS Unit, Paralakhemundi	NSS volunteers	39
3rd Utkal Krishi Mela	7–8 Apr 2025	M.S. Swaminathan School of Agriculture with ICAR and NABARD representatives	Farmers, agri-entrepreneurs, students	1117 participants
Bioenzyme workshop on	17 Mar 2025	Department of Zoology with Bioenzyme	Students	50

Programme	Date	Organiser / partner	Audience	Participants
wastewater bioremediation		Entrepreneurs Academy		
Summer Internship: Integrative Approaches in Plant Science	19 May–13 Jun 2025	School of Pharmaceutical and Life Sciences	Students	26
World Environment Day	5 Jun 2025	Department of Botany, Green Team, School of Nursing	Students and staff	56
Farmer awareness on pest detection and management	Jun 2025	M.S. Swaminathan School of Agriculture with Harsha Trust	Farmers	32
Van Mahotsav with urban forestry session	2 Jul 2025	Department of Botany with CSIR–IMMT	Students and faculty	47
Plantation education at Kusumati Chhanaghara High School	7 Jul 2025	CSR Cell with Kusumati Chhanaghara Gram Panchayat	School pupils, teachers, Gram Panchayat volunteers	13
Plantation education at Primary School, Rattini, Srikakulam	10 Jul 2025	RAWE students and NSS Unit	School pupils and villagers	31
Campus plantation programme	15–19 Jul 2025	NSS Unit, Paralakhemundi	NSS volunteers	126
Drone training for students and faculty	30 Jul 2025	Remote Pilot Training Organisation	Students and faculty	45
National Remote Sensing Day	12 Aug 2025	School of Engineering and Technology	Students	58
Youth Red Cross plantation drive	15 Aug 2025	Youth Red Cross Unit, Paralakhemundi	YRC volunteers	38
Residential farmer training under NMAET–ATMA	3–4 Sep 2025	M.S. Swaminathan School of Agriculture	Farmers	25
Geomatics session on geospatial tools for natural-resource management with ICAR–IISWC	17 Sep 2025	School of Engineering and Technology with ICAR–Indian Institute of Soil and Water Conservation	Faculty and students	73
Workshop on Entomology and Apiculture	12 Sep 2025	Department of Zoology	Students	39
Workshop on Foundations of SDGs (SDG 15)	19–20 Sep 2025	School of Management	Students	29

Programme	Date	Organiser / partner	Audience	Participants
Expert discussion on drones for sustainable forestry	25 Sep 2025	Remote Pilot Training Organisation	Students and faculty	100
Plantation education, Rayagada campus	Sep 2025	CUTM Rayagada	Students	25
Training on saffron cultivation in controlled environments	23–24 Oct 2025	M.S. Swaminathan School of Agriculture	Students and farmers	34 farmers
Planting of endangered red sandalwood	24 Oct 2025	CSR Cell and Green Brigades, Bhubaneswar	Students	15
Workshop on Organic Dragon Fruit Farming	3 Nov 2025	M.S. Swaminathan School of Agriculture	Students and farmers	10 farmers
International GIS Day: GeoAI and ecological zoning of Raimona National Park	19 Nov 2025	School of Engineering and Technology with Esri India and Indian Society of Geomatics	National and international delegates, students	173
World Soil Day	5 Dec 2025	Department of Soil Science	Students	100
Farmers' meeting and field visit on organic farming and soil health	Dec 2025	M.S. Swaminathan School of Agriculture with the FFVDP project of CCD	Farmers	118
Exposure visits for tribal and CCD farmers	Dec 2025	M.S. Swaminathan School of Agriculture (Missiorer project and CCD)	Tribal and smallholder farmers	48
Kisan Divas (National Farmers' Day)	23 Dec 2025	M.S. Swaminathan School of Agriculture	Farmers, students, faculty	169
Capacity-building programme on Medicinal Plant Gardening	29 Dec 2025	Department of Botany	Community and student participants	71

Growth in Recorded Reach

In 2025, Centurion University of Technology and Management (CUTM) significantly expanded the reach of its ecosystem education and awareness initiatives. A total of 1,222 participants were recorded across 19 programmes, representing an almost fivefold increase in recorded participation compared with 2024. This growth reflects the university’s increasing efforts to engage students, faculty members, local communities, and other stakeholders in environmental education, biodiversity conservation, and sustainable ecosystem management.

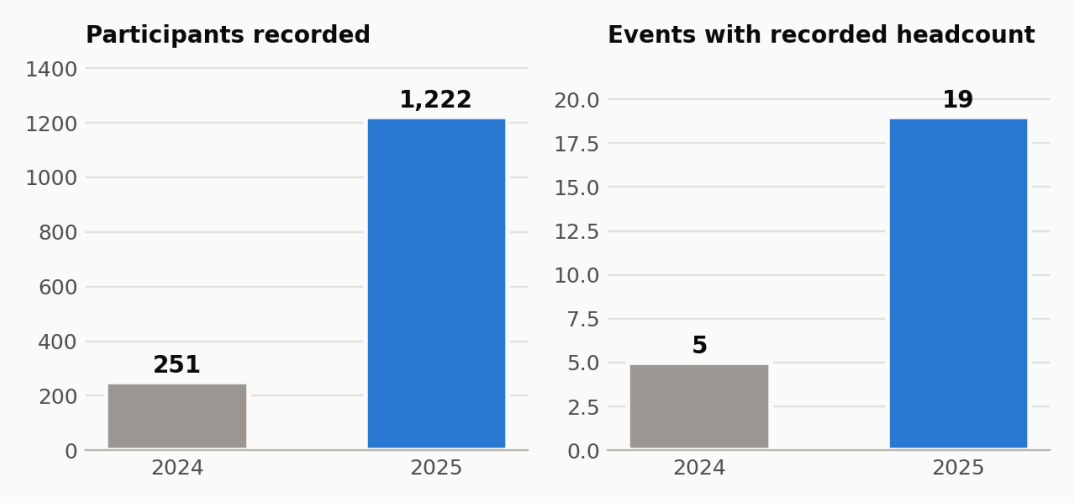


Fig 1: Participants and events with recorded headcount in ecosystem education, 2024 and 2025

2. Programmes on Wild Flora and Fauna

Workshop on Entomology and Apiculture — 12 September 2025

The Department of Zoology, School of Applied Sciences, Bhubaneswar, held a workshop on entomology and apiculture for 39 participants, covering insects and their role in ecosystems, pollinators and bee-keeping. The University's apiculture unit, which maintained 22 active bee colonies in 2025, is used for live demonstrations of hive management.



Fig 2: Hive inspection and apiculture practice by students, January 2025

Capacity-Building Programme on Medicinal Plant Gardening — 29 December 2025

The Department of Botany held a capacity-building programme on medicinal plant gardening for 71 participants. Growing medicinal plants in gardens reduces the pressure to collect them from forests. The University's own collection of 80 medicinal and aromatic species, including red sandalwood, sandalwood, bael and nux vomica, is labelled with botanical and local names for teaching.



Fig 3: Labelled medicinal plant collection used for teaching

Summer Internship in Plant Science — 19 May to 13 June 2025

Twenty-six students took part in the four-week internship "Integrative Approaches in Plant Science and Phytopharmaceutical Research: From Field to Lab", covering plant science and phytopharmaceutical research from the field to the laboratory.

Snake Rescue and Awareness Programme — 2025

The NSS Unit at Paralakhemundi conducted a snake rescue and awareness programme on snake safety and rescue with 24 student volunteers. The campus is home to the King Cobra (Vulnerable) and the Indian Rock Python (Near Threatened), and the programme promotes the protection of snakes that enter campus and village spaces.

Van Mahotsav and Urban Forestry Session — 2 July 2025

The Department of Botany, Bhubaneswar, celebrated Van Mahotsav with 47 participants. Dr. Nabin Kumar Dhal, Chief Scientist, CSIR–Institute of Minerals and Materials Technology, spoke on environmental challenges, and an interactive session on urban forestry covered correct planting techniques. Saplings were chosen for local climate and soil conditions. More than 30 saplings of native medicinal and shade-giving trees were then planted.

World Environment Day — 5 June 2025

The Department of Botany and the Green Team observed World Environment Day with an expert talk by Prof. Kunja Bihari Satpathy on the importance of the environment and its issues, followed by a plantation drive. The School of Nursing held a parallel programme for 56 participants with an awareness session and a poster competition on the theme "Beat Plastic Pollution".

Planting of Endangered Red Sandalwood — 24 October 2025

Fifteen students and 40 Green Brigades of the Bhubaneswar campus planted red sandalwood (Pterocarpus santalinus), an Endangered species endemic to the Eastern Ghats, together with coffee, on the lawn in front of the Aryabhatta Building.



Fig 4: Students planting red sandalwood, 24 October 2025

3. Programmes on Monitoring Forests and Protected Areas

International GIS Day: GeoAI and Ecological Zoning of Raimona National Park — 19 November 2025

On International GIS Day, the School of Engineering and Technology, in collaboration with Esri India and the Indian Society of Geomatics, hosted the International Conference on GeoAI and Smart Mapping for a Sustainable Tomorrow, attended by 173 students, researchers, faculty members and professionals. A central case study demonstrated the use of GeoAI and GIS in the ecological zoning of Raimona National Park, Assam, showing how spatial analysis can identify ecologically sensitive areas, map the interface between human activity and wildlife habitat, and guide low-impact land use around a protected forest. Speakers from the Government of Assam and the Watershed Department, Government of Odisha, contributed to the programme, which also included expert lectures, 34 online paper presentations, 36 research posters reviewed by experts, and a visit to the University's drone centre.



Fig 5: International GIS Day, 19 November 2025

National Remote Sensing Day — 12 August 2025

Fifty-eight students attended expert talks and a quiz on satellite Earth observation, learning how vegetation, forest canopy and land cover are mapped from space and how changes in forest condition are detected.



Honourable dignitaries on the dais



Students attentively listening to the speaker

Fig 6: National Remote Sensing Day, 12 August 2025

Drone Training and Expert Discussion on Drones for Sustainable Forestry — 30 July and 25 September 2025

The University's Remote Pilot Training unit trained students and faculty in flying drones and collecting aerial data on 30 July 2025, and on 25 September 2025 held an expert discussion on the use of drones in sustainable forestry operations.



Fig 7: Drone training for students and faculty, 30 July 2025

Geomatics Session with ICAR–IISWC — 17 September 2025

Dr P. Raja, Principal Scientist at the ICAR–Indian Institute of Soil and Water Conservation, led a session for 73 students and faculty, organised by the School of Engineering and Technology and the Centre for Data Science and Machine Learning. He explained how GIS, remote sensing and other geospatial tools are used for sustainable natural-resource management, environmental monitoring and climate change research, and outlined research and career opportunities in these fields.

Workshop on Foundations of SDGs — 19–20 September 2025

The School of Management's two-day workshop for 29 participants included a session on SDG 15 (Life on Land), with group exercises linking forest protection, halting land degradation and biodiversity conservation to local action.

4. Environmental Education with Schools, Villages and Volunteers

Kusumati Chhanaghara High School — 7 July 2025

On the occasion of Vana Mahotsav, the University's CSR Cell organised a tree plantation and environmental awareness programme at Kusumati Chhanaghara High School. Thirteen University volunteers, together with volunteers of the Kusumati Chhanaghara Gram Panchayat, the University's Green Brigades and the school's teachers, planted trees around the playground and within the school premises. The programme also made participants aware of the importance of trees for a clean and healthy environment.



Fig 8: Plantation education at Kusumati Chhanaghara High School, 7 July 2025

Primary School, Rattini, Srikakulam District — 10 July 2025

RAWE students and the NSS Unit held a plantation drive with awareness sessions at the Primary School, Rattini, on the role of trees in maintaining ecological balance and conserving biodiversity. Neem, mango, guava and flowering plants were planted, and participants were guided on watering and the long-term care of the saplings.



Fig 9: Environmental education at the Primary School, Rattini, 10 July 2025

Volunteer Plantation Programmes

- **Terrace Orchard:** 31 January 2025 — 39 NSS volunteers planted mango, guava and jackfruit at the Terrace Orchard, Ranadevi, on reclaimed hill land.
- **Campus plantation programme:** 15–19 July 2025 — 126 NSS volunteers planted more than 200 saplings within and around the Paralakhemundi campus.
- **Youth Red Cross:** 15 August 2025 — 38 Youth Red Cross volunteers planted 20–25 saplings across the campus.
- **Rayagada campus:** September 2025 — 25 students took part in a plantation drive on the Rayagada campus.

The M.S. Swaminathan School of Agriculture also runs the "One Student, One Plant" campus greening initiative.

5. Ecosystem and Natural-Resource Education for Farmers

Natural Farming and Soil Health Demonstrations

Students and farmers were trained in natural-farming inputs that reduce dependence on synthetic chemicals harmful to soil organisms, pollinators and the wild species living on farmland. Demonstrations covered Beejamrit for seed treatment, Jeevamrit and Panchagavya for soil biology, Azolla cultivation, Trichoderma for plant health and vermicomposting of farm residues.On 17 March 2025, the Department of Zoology, with the Bioenzyme Entrepreneurs Academy, held a workshop at the Pollinators' Paradise on restoring polluted water with bioenzymes, during which about 50 students prepared bioenzymes from fruit and vegetable peels for treating the campus water bodies. Students are also trained in orchid propagation, raising plantlets by micropropagation in the laboratory and hardening them in shade houses and polyhouses, and the Orchidarium distributes orchid plantlets to farmers and aspiring orchid growers.

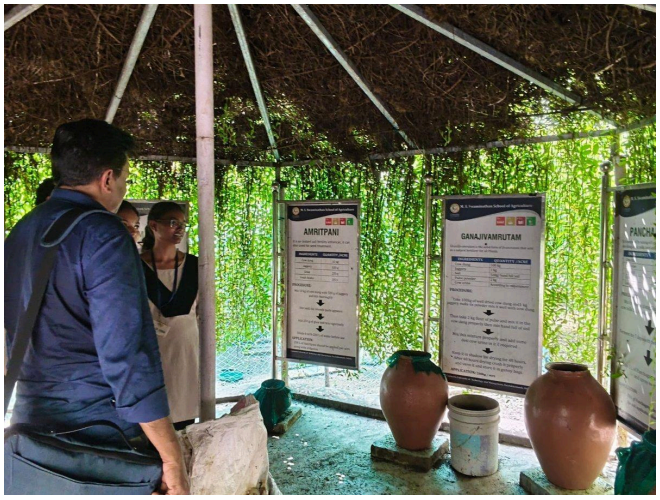


Fig 10: Natural-farming inputs demonstration unit used for farmer training

Farmer Programmes in 2025

- **Utkal Krishi Mela:** 7–8 April 2025 — the 3rd Utkal Krishi Mela brought farmers together with ICAR and NABARD representatives for demonstrations, panel discussions and a farmers' quiz; Soil Health Cards were distributed to host farmers.
- **Pest detection and management:** June 2025 — 32 participants learnt to detect and manage crop pests in a programme run with Harsha Trust.
- **NMAET–ATMA:** 3–4 September 2025 — 25 participants residential training under the National Mission on Agricultural Extension and Technology.

- **Organic dragon fruit farming:** 3 November 2025 — organic soil management and marketing of dragon fruit, a drought-tolerant crop for marginal upland.
- **Organic farming and soil health:** December 2025 — 118 farmers under the FFVDP project of CCD attended a meeting and field visit on organic farming and soil health management.
- **Exposure visits:** December 2025 — 20 tribal farmers under the Missiorer project and 28 CCD farmers visited the University's agricultural and allied units.
- **Kisan Divas:** 23 December 2025 — 169 farmers, students and faculty observed National Farmers' Day.

Two continuing programmes run with Gram Tarang add to this reach. Cumulatively since they began, the SEEDAP collaboration has covered 900 of a planned 3,000 farmers in Srikakulam, Vizianagaram and Visakhapatnam districts, and the NSDC-supported Innovation Agriculture Project has trained 2,725 farmers and 124 Community Resource Persons across nine tribal-dominated districts of South Odisha and three districts of North Coastal Andhra Pradesh. These cumulative figures are not included in the 2025 totals.



Fig 11: 3rd Utkal Krishi Mela, 7–8 April 2025

6. The Campus as a Living Classroom for Wild Flora and Fauna

The University's campuses are documented in detail so that students and visitors can study wild species in their habitats:

- **Fauna:** 434 wild animal species — 295 insects, 58 butterflies, 52 birds in 32 families, 24 spiders, 4 reptiles and amphibians and 1 wild mammal. Threatened species include the King Cobra (Vulnerable) and the Indian Rock Python and Indian Roller (both Near Threatened).
- **Trees:** Across its campuses, the University’s plant censuses record 4,195 trees of 80 species, 74.6% of them native, including the Endangered teak and red sanders and the Vulnerable sandalwood, big-leaf mahogany, satin wood and karra, together with a further 25,904 plants of 83 species, including mango, coconut, arecanut and other fruit and plantation trees, native trees such as sal, bahada, harida, kadamba and neem, field and spice crops such as turmeric, maize and mustard, ornamental plants and 1,550 orchids.
- **Plant collections:** a 68-species micro-forest, 80 medicinal and aromatic plant species, a medicinal garden at Bhubaneswar and an Orchidarium of 550 orchid plants of five species.
- **Pollinator habitat:** The Pollinators’ Paradise, first developed as the Butterflies, Bees and Cactus Garden, a campus “live lab” rated “Highly Commended” in the Nature Positive category of the International Green Gown Awards 2025. Its cactus and succulent collection is used to show students and visitors how plants adapt to dry, water-scarce conditions.

Plant biodiversity boards and labelled plants with botanical and local names allow students, school groups and farmers to identify species on their own during visits.



Fig 12: Plant biodiversity board and campus plant collections used for field learning



Fig 13: Orchidarium, M.S. Swaminathan School of Agriculture

7. Courses on Ecosystems, Wild Flora and Fauna

Formal courses give students a structured grounding in ecosystems before they take that knowledge to communities through field work, NSS and outreach.

Table 2: Ecosystem-related courses in the B.Sc. (Agriculture) programme

No.	Course	Code	Ecosystem content
1	Environmental Studies and Disaster Management	ASES3101	Ecosystems, biodiversity, forests, deforestation and conservation
2	Farming System and Organic Farming for Sustainable Agriculture	ASAG3207	Ecosystem services, biodiversity conservation, resilience
3	Principles of Integrated Pest and Disease Management	ASAP3204	Natural enemies, beneficial insects, ecological pest control
4	Introductory Agro-meteorology and Climate Change	ASAG1202	Climate change and its impact on ecosystems
5	Production Technology for Ornamental Crops, MAPs and Landscaping	ASHO2204	Medicinal and aromatic plants, landscape plants
6	Weed Management	ASAG2105	Plant identification and ecological weed control
7	Principles and Practices of Natural Farming	ASAG2104	Soil biology and natural-farming inputs
8	Fundamentals of Nematology	ASNE2101	Soil fauna
9	Geoinformatics and Nano-technology for Precision Farming	ASAG3110	Remote sensing and GIS for land and vegetation
10	Beneficial Insect Farming	CU 3214	Pollinators, bees, silkworms and lac insects
11	Horticulture Nursery Management	CU 3213	Propagation of native and useful plants

No.	Course	Code	Ecosystem content
12	Soil and Water Conservation through Watershed	CUSW2340–2342	Watershed ecosystems and their management
13	Plant Tissue Culture and Vegetative Propagation	CUPT2420–2422	Propagation and conservation of plant species
14	Organic Farming	CUOF2230–2232	Biofertilisers, biopesticides and farm biodiversity

8: Veterinary Outreach and Animal-Health Education as Supporting Learning Activities

The School of Veterinary and Animal Sciences (SoVAS), through the Veterinary Clinical Complex (VCC), conducted veterinary ambulatory clinics and animal-health camps in rural communities during July–October 2025. These programmes aimed to provide clinical treatment to livestock and raise public awareness about livestock management practices and associated diseases. They complement CUTM's existing initiatives on cattle-feed preparation, livestock management and the Crop Cafeteria by demonstrating practical engagement with livestock-owning communities.

Details of practical training, internships, field visits, and clinical training provided to students.

1. Laboratory Practical Training
2. Veterinary Clinical Training
3. Livestock Farm Practical Training
4. Ambulatory Veterinary Clinical Training
5. Livestock Farm Field Visits
6. Veterinary Public Health and Food Safety Training
7. Veterinary Extension and Farmer Interaction
8. Rotating Veterinary Internship
9. Animal Health Camp Participation
10. Vaccination and Deworming Awareness Activities
11. Animal Handling and Welfare Training
12. Community Veterinary Outreach Activities

- Number of farmers trained in livestock management, dairy farming, poultry farming, goat farming, and animal nutrition - 1,026 farmers and pet owners educated on nutrition, hygiene, breeding, vaccination, deworming and disease prevention.
- Number of programmes conducted to improve livestock productivity and food security - 49 outreach activities in 25 villages, including 7 infertility/health camps (193 animals).
- Details of veterinary support provided to farmers for improving animal health and production - Examination, treatment, minor surgery, first aid, deworming and vaccination of cattle, buffaloes, sheep,

goats and poultry performed. 62 advanced cases referred to TVCC. At the VCC, 8,075 animals received reproductive, obstetric, diagnostic and emergency care.

- Number of community outreach programmes related to sustainable animal husbandry - 49 camps with farmer awareness sessions, run with village panchayats and the CDVO, Gajapati.
- Details of initiatives supporting milk, meat, egg, and other animal-source food production, where applicable.

  Veterinary examination, treatment, reproductive and obstetric care, disease prevention, vaccination, deworming, and farmer awareness activities support livestock health and the sustainable production of animal-source foods. The VCC provided reproductive, obstetric, diagnostic and emergency care to 8,075 animals, and outreach camps provided care to 1,143 animals. Direct production figures for milk, meat, eggs or other animal products were not provided.
- Number of animals treated through veterinary hospitals, clinics, or camps - 8,075 at the VCC (4,213 companion; 3,862 livestock) and 1,143 in camps.
- Number of animal vaccination and disease-prevention programmes conducted - 374 animals vaccinated, including rabies vaccination of pets and stray/companion animals.
- Number of deworming and animal health awareness programmes conducted - Deworming and parasite control done in every camp. Farmers brought animals back on advised vaccination and deworming schedules.
- Details of zoonotic disease prevention and control activities - Rabies vaccination and disease control in pets and livestock, described as reducing zoonotic risk (One Health approach).
- Number of people, farmers, or livestock owners reached through animal health awareness programmes - 1,026 farmers and livestock owners (camps).

List of VCI Subjects / Courses Related to the Sustainable Development Goals

S. No.	Subject as per VCI	Examples of Potential Contributions
1	Veterinary Anatomy	Practical teaching, anatomical demonstrations, clinical skill development and wildlife anatomy research.
2	Veterinary Physiology	Research on animal physiology, health, stress responses and welfare.
3	Veterinary Biochemistry	Diagnostic research, metabolic profiling, biochemical testing and nutritional assessment.
4	Veterinary Pharmacology and Toxicology	Rational drug use, antimicrobial stewardship, veterinary drug safety and toxicology research.
5	Veterinary Parasitology	Parasite surveillance, prevention of parasitic diseases and reduction of livestock production losses.
6	Veterinary Microbiology	Zoonotic disease research, antimicrobial resistance surveillance and microbiological testing.
7	Veterinary Pathology	Disease diagnosis, necropsy services, laboratory investigations and disease surveillance.
8	Veterinary Public Health and Epidemiology	Food safety, zoonoses surveillance, outbreak investigation and One Health programmes.

9	Animal Nutrition	Balanced ration formulation, fodder development, feed efficiency and improved livestock productivity.
10	Animal Genetics and Breeding	Genetic improvement, sustainable breeding, indigenous breed conservation and livestock genetic-resource management.
11	Livestock Production Management	Sustainable livestock production, farm productivity, farmer livelihoods and climate-resilient animal husbandry.
12	Livestock Products Technology	Hygienic meat and milk processing, food safety, value addition, by-product utilization and reduction of food waste.
13	Veterinary Gynaecology and Obstetrics	Reproductive healthcare, infertility management, obstetrical services and improved reproductive efficiency.
14	Veterinary Surgery and Radiology	Surgical care, diagnostic imaging, clinical interventions and practical skill development.
15	Veterinary Medicine	Disease treatment, preventive healthcare, clinical consultations and livestock health camps.
16	Veterinary and Animal Husbandry Extension Education	Farmer training, knowledge transfer, women's empowerment, rural entrepreneurship and community outreach.
17	Veterinary Clinical Practices	Clinical services, practical training and improved access to veterinary healthcare.
18	Livestock Farm Practices	Farm demonstrations, biosecurity, manure management, resource efficiency and sustainable livestock production.

Veterinary Clinical Services and Community Outreach

- Total number of veterinary camps conducted - 49 in January-December 2025: 42 mobile ambulatory clinics and 7 infertility/health camps.
- Total number of villages and communities covered - 25 villages in Gosani, Kashinagar, Gumma and Rayagada blocks, Gajapati District.
- Number of farmers and livestock owners benefited - 1,026 at camps; 3,226 at the VCC; 4,252 in total if the two groups are distinct.
- Number and types of animals treated, such as cattle, buffaloes, goats, sheep, poultry, and other animals - Camps: 1,143 cattle, buffaloes, sheep, goats, poultry, pets and strays. VCC: 8,075 = 4,213 companion animals + 3,862 livestock.

Veterinary Outreach Camps and Animal-Health Services

Seven veterinary camp reports documented 167 animal treatments at Bagusala, Jogipadu, G. Talasingh, Hadubangi, Ramachandrapur, Mahadeipur and Ranipenta between July and August 2025. Four additional reports documented 86 animal treatments at Sariapalli, Jogipadu, Ranipenta and Deviti during the subsequent reporting period. Across the reports, a total of 253 animal treatments were recorded.

Date	Village / location	Animal treatments recorded
8 July 2025	Bagusala	25
11 July 2025	Jogipadu	21
16 July 2025	G. Talasingh	26
24 July 2025	Hadubangi	17
13 August 2025	Ramachandrapur	41
21 August 2025	Mahadeipur	21
29 August 2025	Ranipenta	16
15 October 2025*	Sariapalli	21
10 October 2025	Jogipadu	28
17 October 2025	Ranipenta	22
24 October 2025	Deviti	15
Total		253

The reported cases included parasitic infestations, inappetence, nutritional deficiencies, wounds and orthopaedic conditions, pregnancy diagnosis, repeat breeding, anoestrus and postpartum conditions. The Hadubangi camp also recorded the collection of three clinical samples for diagnostic assessment. These activities demonstrate the University's provision of veterinary services beyond the campus and its engagement with rural livestock-management needs. However, the reports do not provide a verified headcount of participating students or farmers.

Training, Workshops and Awareness Programmes

The following seminar, awareness and training activities were provided for inclusion. Attendance/participant counts, venue details and signed event reports were not supplied, so these are listed without estimating participation.

World Rabies Day event — September 2025.
ASCAD Training Programme – 1 — 20–24 January 2026.
ASCAD Training Programme – 2 — 10–14 February 2026.
Tribal Farmer Training Programme — 31 March–6 April 2026.

ASCAD Training Programme 1

Training programme: “Shaping Animal Health Sector with Modern & Precision Diagnostics”. The attendance sheets identify the programme dates as 25–29 March 2025.

1. Inauguration and programme proceedings

Event Photographs

Inauguration



Guests for the Inauguration Ceremony	Speech by Hon'ble District Collector, Gajapati
Inviting the participants to the Training Program by CDVO, Gajapati	Inviting the participants to the Training Program by Dean, SOVAS
Participants	Participants

Figure 1. Inauguration ceremony, address by the Hon'ble District Collector, Gajapati, felicitation/invitation of participants, and training participants

Tribal Farmer Training Programme

The following photographs document participant arrival and travel to the training venue, along with exposure visits to the Veterinary Clinical Complex and Livestock Farm Complex.



Figure 1. Participants starting to CUTM campus



Figure 2. Participants travelling from Tikiri to the training venue

Figure 4. Participants arriving at the CUTM campus and travelling from Tikiri to the training venue.



Figure 5. Participants at the Veterinary Clinical Complex



Figure 6. Participants during the Livestock Farm Complex visit

Figures 5–6. Participants visiting the Veterinary Clinical Complex and the Livestock Farm Complex.

Student Clinical Duties and Farm Activities

The photographs below document practical and experiential learning undertaken by veterinary students through livestock farm activities, poultry management, feed preparation, clinical teaching, diagnostic procedures, laboratory practicals, anatomy demonstrations, and veterinary clinical care.



Figure 7. Students participating in piggery feeding and farm management activities.



Figure 8. Students observing poultry management and egg collection.



Figure 9. Students participating in feeding and care of small ruminants.



Figure 10. Students observing fodder chopping and feed preparation



Figure 11. Students participating in practical ultrasonography examination of cattle.



Figure 12. Students attending clinical teaching and case-based discussion.



Figure 13. Students receiving practical instruction in veterinary anatomy using skeletal specimens.



Figure 14. Students undertaking hands-on laboratory practical training.



Figure 15. Students observing and assisting during a veterinary surgical procedure.



Figure 16. Students participating in clinical examination and treatment of a companion animal.

8. Research Publications on ecosystems, flora and fauna 2025

Research by CUTM faculty and students on wild flora, fauna and forest ecosystems, published in 2025, feeds directly into teaching and outreach. The consolidated list covers biodiversity documentation, wildlife and wetland health, forest conservation, soil restoration, erosion control, medicinal plant resources and agroforestry. Together, these themes demonstrate research relevance to SDG 15, particularly the conservation of terrestrial and inland freshwater ecosystems, sustainable forest management, combating land degradation and protecting biodiversity.

Table 3: Publications on ecosystems, flora and fauna, 2025

Sl. No.	Publication and Authors (2025)	Journal / Book	Principal Ecosystem Focus	Relevance to SDG 15
1	Dendrobium farmeri Paxton (Orchidaceae): A New Addition to the Flora of Odisha, India — Sugimani Marndi, Madhusmita Barik, Sanath Kumar N. and Sanjeet Kumar (2025)	Indian Forester, 151(1), January 2025	Wild flora and native plant diversity	Documents plant diversity and supports botanical inventories, habitat protection and conservation of native species.
2	Assessing the Bioaccumulation of Copper and Zinc Using Birds as Bioindicators in Different Wetland Ecosystems of Odisha, India — Bibhu Prasad Panda et al. (2025)	Environmental Systems Research, 14(10)	Birds and wetland ecosystems	Evaluates environmental contamination affecting wildlife and provides evidence relevant to wetland ecosystem health and biodiversity conservation.
3	Identifying Ecological Risk Zones Using Spatial Prioritization of Heavy Metal Pollution and Bioaccumulation in Birds — Bibhu Prasad Panda et al. (2025)	Environmental Science and Pollution Research, 32(18), 11727–11748	Avian biodiversity and ecological risk zones	Supports identification of pollution hotspots and prioritization of areas requiring habitat restoration and wildlife protection.
4	Seasonal Dynamics and Optimization of Tapping Methods for Sustainable Gum Harvest in Tropical Forests of Western Odisha, India — Tapas Paramanik, Shantanu Bhattacharyya and Pratibha Rani Deep (2025)	Ethnobotany Research and Applications, 30(66)	Tropical forests and non-timber forest products	Promotes sustainable harvesting of forest resources while supporting forest conservation and the long-term availability of biological resources.
5	Traditional Methods of Detoxifying Medicinal Plants: An Ethnobotanical Survey in the Bargarh District, Odisha — Dileswar Sahu and Gyanranjan Mahalik (2025)	Proceedings of the Indian National Science Academy, 91(1), 241–257	Wild medicinal plants and ethnobotanical knowledge	Documents traditional plant uses and supports conservation of medicinal plant resources and associated traditional knowledge.
6	Decoding Soil Health: Essential Indicators and Management Impacts — Triptesh Mondal et al. (2025)	Environmental Science and Pollution Research, 32(25), 15086–15095	Soil ecosystems and soil quality	Contributes to understanding soil health, sustainable land management and maintenance of productive terrestrial ecosystems.

7	Current Outlook and Future Promise of Ethnomedicinal Study in Western Odisha, India: An Overview — Dileswar Sahu, Ram Babu and Gyanranjan Mahalik (2025)	Plant Science Today	Ethnomedicinal flora and plant resources	Highlights medicinal plant diversity and the importance of conserving biological resources and traditional plant knowledge.
8	Ethnopharmacological and Nutritional Evaluation of Wild Edible Plants in Koraput District, Odisha — Sameer Jena et al. (2025)	Asian Journal of Pharmaceutical and Clinical Research, 18(8), 102–110	Wild edible plants and local flora	Supports recognition and conservation of wild plant diversity and sustainable use of naturally occurring food resources.
9	Assessing the Status of Home Garden Biodiversity in Assam, India: An Economic Perspective — Zafrina Hussain, Saddam Hossen Majumder and Nivedita Deka (2025)	Agroforestry Systems, 99(8)	Home gardens, agroforestry and cultivated biodiversity	Examines the ecological and economic value of home-garden biodiversity, supporting plant conservation and sustainable land-use practices.
10	Exploring the Role of Selective Earthworm Species in Microbial-Mediated Heavy Metal Conversion: Implications for Environmental Bioremediation — Purbasha Priyadarshini and Sunita Satapathy (2025)	Nature Environment and Pollution Technology, 24(3)	Soil fauna and soil microbial systems	Investigates biological processes relevant to soil remediation, ecosystem functioning and recovery of contaminated land.
11	Microbe-Mediated Regulation in Zinc-Contaminated Soils: The Synergistic Role of Hyperaccumulator Plants and Zinc-Tolerant Rhizobacteria — Nitu Rani et al. (2025)	Frontiers in Agronomy, 7	Plant–microbe interactions and contaminated soils	Explores biological approaches to soil restoration, pollution management and rehabilitation of degraded terrestrial ecosystems.
12	Drainage Basin Morphometry of Gandhamardan Hills in Western Odisha Using Geographic Information System — A. K. Bhadra and S. K. Pattanayak (2025)	Springer Nature, Remote Sensing and GIS Application in Forest Conservation Planning	Forest landscapes, drainage basins and watersheds	Supports spatial assessment of landscapes and watersheds for forest conservation, land-use planning and ecosystem management.
13	Application of MCDA–GIS Methods for Soil Erosion Susceptibility Mapping in the Upper Blue Nile River Basin, Ethiopia — Muralitharan Jothimani et al. (2025)	Springer	Soil erosion and watershed landscapes	Identifies erosion-prone areas to inform soil conservation, land degradation prevention and sustainable landscape management.
14	A Review and Conservation Strategy on the Biodiversity Heritage Site of Gandhamardan Hills in Western Odisha, India — S. K. Pattanayak, A. K. Bhadra and P. K. Kar (2025)	Springer Nature	Biodiversity heritage sites and forest ecosystems	Directly supports biodiversity conservation, protection of ecologically important landscapes and strategies for safeguarding natural habitats.

15	Agroforestry Tree Species: Acacia tortilis, Biology, Importance, Agroforestry Production, and Biotechnology Application — Cheruto et al. (2025)	Springer Nature, Tree Biology and Biotechnology	Agroforestry trees and terrestrial vegetation	Addresses tree biology, agroforestry production and sustainable land use, contributing to tree conservation and resilient land management.

Summary of research coverage

Ecosystem / Research Theme	Publication Numbers	Count
Wild flora, medicinal plants and wild edible plants	1, 5, 7, 8	4
Birds, wetlands and wildlife-related ecological risks	2, 3	2
Forest conservation and sustainable forest resources	4, 12, 14	3
Soil health, soil biodiversity and land restoration	6, 10, 11, 13	4
Home-garden biodiversity and agroforestry	9, 15	2
Total unique publications	**1–15**	**15**

Patent by SOVAS

Patent/application and design details provided by SOVAS are listed below. The supplied numbers are reproduced as provided; their legal status (filed, published, granted, or registered), applicant/inventor details and dates should be confirmed against official records.

Patent / application / design number	Title
202431061573A	Innovative Restraining and Care System for small ruminants
202431063716A	Manoeuvrable Swine Restraint Gadget
202431061529A	Modernised Buiatric IV Stand
202531006448A	Canine Restraining Clinical Gadget for Medical and Surgical applications
202531011277A	Advanced Electro-Hydraulic Apparatus For Large Animals
202531021211 A	Foot Bath System for Farm Animals
454352-001	Animal Health Monitoring Collar Band (Listed Four Times In Source; Shown Once Here Pending Confirmation)

SOVAS Veterinary Publications

No.	Publication title	Authors	Bibliographic details (single column)
1	The role of Ashwagandha in modulating gut parameters in dogs—a randomized double-blind placebo-controlled trial	Bharani, K. K.; Devarasetti, A. K.; Bobbili, R.; Khurana, A.; Veera Hanuman, D. D.; Gudepu, R.; Guda, S.	Journal: Frontiers in Veterinary Science Year: 2025 (online; volume year 2024) Volume: 11 Issue: Not listed Pages / article no.: 1491989 DOI: 10.3389/fvets.2024.1491989 Verification: Verified; online publication and volume year differ
2	Genetic characterization of semi-arid sheep populations in India using microsatellite markers	Punuru, P. R.; Regula, V.; Metta, M.; Krovvidi, S. K.; Bhumireddy, J. M.; Baratam, P.; Sunkara, V.; Poonooru, R. R.	Journal: Frontiers in Animal Science Year: 2025 Volume: 6 Issue: Not listed Pages / article no.: 1553610 DOI: 10.3389/fanim.2025.1553610 Verification: Verified
3	Molecular detection and first characterization of Ehrlichia canis from Gajapati in Odisha	Gangitla, S.; Nuka, L.; Palli, A.; Gellanki, S.	Journal: Journal of Advanced Veterinary Research Year: 2025 Volume: 15 Issue: 2 Pages / article no.: 230–232
4	Thermal Stress Markers of Ongole Cattle in Transitional Phase: THI and HSP70	Dhan, P.; Seshu Kumari, V.; Gollu, C.; Swaroop Murikipudi, N.; Srikanth Nistala, R.	Journal: Indian Journal of Veterinary Sciences and Biotechnology Year: 2025 Volume: 21 Issue: 2 Pages / article no.: 69–73 DOI: 10.48165/ijvsbt.21.2.14 Verification: Verified
5	Strategic Retrieval of Foreign Body in a Labrador Dog	Jayathangaraj, M. G.; Raju, F. Sebastin; Saranya, P.	Journal: Acta Scientific Veterinary Sciences Year: 2025 Volume: 7 Issue: 4 Pages / article no.: 08–10 DOI: Not confirmed Verification: Article/issue page; DOI to verify
6	Unraveling the Oxidative stress: Study on biomarkers and their gene expression in periparturient Ongole Cattle	Vasantha, S. K. I.; Sri, M. Reeta Fariya; Charitha, B. V. S. Bhavya; Priyanka, D.; Swaroop, M. Naveen; Srikanth, N. R.; Chaitanya, G.	Journal: Journal of Livestock Science Year: 2025 Volume: 16 Issue: Not separately listed Pages / article no.: 307–314 DOI: 10.33259/JLivestSci.2025.307-314 Verification: Verified
7	Effect of supplementation of spirulina (Arthrospira)	Prem Kumar, R.; Venkateswarlu, S.;	Journal: The Indian Journal of Animal Sciences Year: 2025

	and exogenous protease enzyme on growth performance and nutrient retention of broilers	Srinivasa Rao, D.; Padmaja, K.	Volume: 95 Issue: 2 Pages / article no.: 144–148 DOI: 10.56093/ijans.v95i2.149186 Verification: Verified
8	Genome-wide selective sweeps providing classic evidence of emotional and behavioural control in Bos indicus cattle breeds	Vani, S.; Balasubramanyam, D.; Karthickeyan, S. M. K.; Tirumurugan, K. G.; Gopinathan, A.; Jaya Madhuri, B.; Hepsibah, J.; Srinivasan, G.; Kavith, N. V.; Ganapathi, P.	Journal: Journal of Livestock Science Year: 2025 Volume: 16 Issue: Not separately listed Pages / article no.: 392–401 DOI: 10.33259/JLivestSci.2025.392-401 Verification: Verified
9	Effect of gonadotropin treatment on OPU-IVEP performance in Ongole (Bos indicus) cattle	Mudamanasu, P. K.; Murakonda, M. R.; Nistala, R. S.; Telapalli, S.; Kurati, S. P.; Manda, S.; Makkena, S.; Chigurupati, S. P.	Journal: Journal of Livestock Science Year: 2025 Volume: 16 Issue: Not separately listed Pages / article no.: 454–460 DOI: 10.33259/JLivestSci.2025.454-460 Verification: Verified
10	Gross morphometrical studies on newly born Asiatic lion cubs (Panthera leo persica)	Author list not confirmed	Journal: Journal of Experimental Zoology India Year: 2025 Volume: 28 Issue: 2 Pages / article no.: Not confirmed DOI: 10.51470/jez.2025.28.2.1711 Verification: Partial verification; confirm authors/pages
11	Feline urinary system affections—diagnostic imaging	Saranya, P.; Kamalakar, G.; Harikrishna, N. V. V.; Chandra Prasad, B.	Journal: Journal of Livestock Science Year: 2025 Volume: 16 Issue: Not separately listed Pages / article no.: 437–445 DOI: 10.33259/JLivestSci.2025.437-445 Verification: Verified
12	Healthier Choices: Oleogels as a Smart Fat Replacement Solution	Sonia, B.; Naga Mallika, E.; Pal, U. K.; Giridhara Rao, V.; Udaya Kiran, A.; Bhavya Charitha, B. V. S.; Chaitanya, G.	Journal: Journal of Meat Science Year: 2025 Volume: 20 Issue: 1 Pages / article no.: 14–30 DOI: 10.48165/jms.2025.20.01.2 Verification: Verified; veterinary relevance should be checked
13	Assessment of Lumpy Skin Disease prevalence in cattle: insights from a regional outbreak	Uma Maheswari, S.; Samatha, V.; Rama Devi, V.; Ramesh Babu, K.; Praveen Kumar, M.	Journal: Journal of Livestock Science Year: 2025 Volume: 16 Issue: Not separately listed Pages / article no.: 574–579

			DOI: Not confirmed Verification: Confirm DOI from publisher
14	From Blood Loss to Bone Marrow: Understanding Anaemia in Veterinary Medicine	Author list not confirmed	Journal: Not verified Year: Not verified Volume: Not verified Issue: Not verified Pages / article no.: Not verified DOI: Not verified Verification: Full bibliographic record not confirmed
15	Morphological and physiological aspect of identification of bones related to forelimb in calf and adult great Indian one-horned rhinoceros (Rhinoceros unicornis)	Sinha, R.; Durga Prasad, D. V. V. N.; Kumar, A.; Nehara, D.; Pandey, A.; Siddique, R. A.; Singh, R. K.	Journal: Journal of Experimental Zoology India Year: 2025 online record; DOI metadata indicates 2026 volume Volume: 29 Issue: 1 Pages / article no.: 785–793 DOI: 10.51470/jez.2026.29.1.785 Verification: Year/DOI inconsistency; verify issue record
16	Comparative gross morphological and physiological studies on axial skeleton and visceral organs of Indian Russell's viper (Daboia russelli), Indian rat snake (Ptyas mucosa) and Indian rock python (Python molurus)	Author list not confirmed	Journal: Not verified Year: Not verified Volume: Not verified Issue: Not verified Pages / article no.: Not verified DOI: Not verified Verification: Full bibliographic record not confirmed
17	Molecular Characterization of Macherla Sheep: Comparative Genetic Insights with the Nellore Brown Sheep	Punuru, P. R.; Vinoo, R.; Metta, M.; Venkatasesaiah, C.; Aswani Kumar, K.; Jaya Madhuri, B.	Journal: Journal of Experimental Biology and Agricultural Sciences Year: 2025 Volume: 13 Issue: 5 Pages / article no.: 782–791 DOI: 10.18006/2025.13(5).782.791 Verification: Verified

9. Conclusion

Centurion University of Technology and Management (CUTM) demonstrates a sustained commitment to ecosystem education and biodiversity conservation by integrating formal academic learning with practical training, field-based activities, and community outreach. During 2025, the University conducted educational programmes addressing wild flora and fauna, pollinator conservation, medicinal plants, forest monitoring, ecological mapping, sustainable agriculture, soil health, and natural-resource management. These initiatives engaged students, schoolchildren, teachers, farmers, tribal communities, volunteers, and national and international participants, extending environmental awareness beyond the university campuses.

The University's campuses also serve as living laboratories for ecosystem education, supported by documented biodiversity resources, including 434 recorded wild animal species, 4,195 trees representing 80 species, medicinal and aromatic plant collections, an Orchidarium, and Pollinators' Paradise. Practical initiatives such as planting endangered red sandalwood, promoting pollinator-friendly habitats, conducting snake-awareness programmes, and demonstrating GIS, remote sensing, and drone applications in sustainable forestry help connect scientific knowledge with real-world conservation challenges. Partnerships with organisations such as Esri India, the Indian Society of Geomatics, CSIR–IMMT, ICAR–IISWC, and community organisations further strengthen these educational efforts.

CUTM's approach reflects an integrated model of environmental education in which curriculum-based learning, biodiversity documentation, hands-on conservation activities, and community engagement reinforce one another. By expanding participation, strengthening institutional and community partnerships, and promoting practical knowledge of ecosystem protection, the University contributes to the objectives of SDG 15: Life on Land, particularly through education and awareness of terrestrial biodiversity and sustainable ecosystem management.