

# MANGALORE UNIVERSITY



## ENVIRONMENTAL POLICY

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### 1.0 Preface

Rapid urbanization and industrialization coupled with population pressure has paved the way for an alarming increase in the degradation of the quality of the environment and biodiversity. Educational institutions have a special responsibility not only to decipher the knowledge but also to sensitize students and the general public by practicing and implementing various eco-friendly strategies and working towards the 17 Sustainable Development Goals (SDGs) of the United Nations for 2030. Mangalore University since its inception in 1980 has been making efforts to implement and carry out environment-friendly activities on the campus and outside and follows this Environmental Policy with the main objective to further enhance green initiatives.

Several strategies have been adopted to significantly reduce Carbon footprint including paperless office/e-governance, digital library, digital payment gateway, complete ban on single-use plastic usage; recycling of organic wastes through vermicomposting, pot-composting, biogas production and plantation drives. Rainwater harvesting has contributed to water conservation to the tune of 25,000m<sup>3</sup>, was further enhanced by constructing 2 roof-top rainwater harvesting systems with storage capacities of 1.0 lakh and 2.0 lakh litres capacities and Sewage Treatment Plants are set up for water treatment. In India, among 105 Institutions, Mangalore University is ranked 1<sup>st</sup> in Setting and Infrastructure, a metric that pertains to sustainable and green campus, 3<sup>rd</sup> in sustainable Water Resource management and 4th in sustainable Waste Management practices. The University has also taken part in the World University Times Higher Education Impact Rankings 2025 on SDGs and scored >50% in SDG1 No poverty, SDG 2 Zero Hunger and SDG17 Partnership for the Goals.

The campus is comprised 94.9% of its total area with scrub land (78.2%), mixed vegetation (9.1%) and botanical gardens (7.6%) of the total area. Installation of solar panels, solar street lights and solar heaters accounts for a saving of total electricity consumption; replacement of incandescent lamps with LED bulbs and dependence on most energy efficient electronic/electrical appliances accounts for energy saving.

The campus biodiversity is further enriched by conducting tree plantation drives with special reference to fruit-yield saplings, local species and endemic species of the Western Ghats. The flora of the campus are documented and labelled and initiatives such as 'Plant of the Day' bulletin board are implemented. It enhanced the green atmosphere on the campus, and helped

in increasing the biodiversity with special reference to birds, and insects, particularly butterflies. The campus biodiversity has been documented by internal and external agencies such as the Zoological Survey of India to include 817 species of 20 faunal groups, with 170 bird, 22 mammal, 38 reptile, 21 amphibian, 129 butterfly, 136 moth, 92 spider and 31 damselfly species. The bird count conducted each year in and around the campus indicated a significant increase in the number of species, including migratory ones. ‘One-Student-One-Plant’ initiative enabled students to become more conscious about nature and its conservation. ‘Plant a sapling on your Birthday’ campaign has also taken root. Environmental, green and energy audits are conducted with internal experts and validate through external agencies.

As part of Institutional Social Responsibility (ISR), the University has adopted villages and Government schools and has made efforts to disseminate the knowledge of eco-friendly practices, by conducting public awareness programs such as workshops on vermicomposting, and Krishi Melas or farmers’ fairs to create awareness about sustainable agriculture and encourage organic farming.

The University celebrates World Environment Day, World Water Day, National and World Wildlife weeks, and organizes cleanliness drives with the participation of students and the public. All these integrated strategies not only encouraged eco-friendly practices, but the University has become a role model through its sustained performance in World University Rankings pertaining to green practices and SDGs. These efforts with the involvement of staff, students, the local public, government organizations and NGOs will further continue to contribute to the conservation of the environment and biodiversity.

### **1.1 Policy Statement**

The University commits to the adoption of principles and ‘best practicable environmental options’ for sustainable growth in academics and infrastructural developments. The University recognizes the importance of meeting the legal requirements in managing waste responsibly, reducing the volume of waste sent to landfill, and maximizing reuse, recycling, upcycling, downcycling wherever possible. The University takes the cooperation of all the teaching and non-teaching staff, students, guests and anyone else making use of the premises to comply with this Policy.

## 1.2 Objectives of the Policy:

- To implement and promote environment-friendly strategies towards sustainable growth of the University.
- To invest in and utilize renewable energy sources and reduce Carbon footprint.
- To reduce greenhouse gas emissions for mitigation of global warming and climate change by stationery, process combustions and e-vehicle / CNG vehicle usage also in public transport.
- To enable students to study in a green ambience.
- To implement water conservation strategies and devices, through rainwater harvesting, storage, construction of bunds and dams to reduce runoffs and foster groundwater recharge
- To take up planned, sustainable initiatives that enhance campus biodiversity and its periodic documentation.
- To make the campus a complete plastic-free zone, by banning single-use plastics, pens and reduce ecological footprint to the extent possible.
- To construct/convert buildings into green buildings that support energy efficiency through LEDs and sensors, water conservation through rainwater harvesting and security features such as fire alarm, designated fire assembly points etc, and have SOPs in place in case of accident, fire, crime etc.
- To adopt and encourage principles of environmental conservation – reduce, refine, recover, recycle (upcycle / downcycle), reuse.
- To motivate participation in activities on environmental conservation and create awareness, motivate and promote the general public to practice and adopt environment-friendly lifestyles.
- To regularly conduct green and energy audits.
- To fully implement e-governance through more efficient paperless administration.
- To maintain a green and clean campus at all times and integrate green initiatives/SDGs into all upcoming projects, plans and programs.
- To effectively implement various strategies that support the concept of waste to treasure.
- To apply strategies for the conversion of organic wastes into products that can be used for a green environment.
- To further improve solid, liquid, biomedical, toxic and e-waste management strategies towards sustainable waste management.
- To carry out extension and outreach activities that support sustainable development.

- To join hands with the Government/local bodies in implementing new policies and projects of environmental concerns.
- To be a model for others by sensitizing them to practice and adopt conservation strategies.
- To have a sustainable procurement/purchasing policy by ensuring adoption of low carbon technologies in buildings and equipment procurement.
- To identify opportunities and innovative ideas that help in the sustainable growth of the University.
- To encourage, promote, support and manage sustainability related start-ups.
- To mainstream SDGs into curricula, research, co-curricular activities, policies and best practices and give particular importance to the inclusion of environment-related topics while designing curricula.
- To conduct events by applying environment-friendly practices, mandatorily adopt practices on ecological awareness and organize awareness programmes on a regular basis.
- To prepare periodic sustainability reports and have a Sustainability Website/portal.
- To display University maps indicating buildings, outdoor study points, green cover etc.

### **1.3 Policy on Plastic / Disposable Items Minimization / Plastic-free campus:**

- Use of plastic cups/plates in its hostels/cafeteria and functions is banned as a policy. Departments avoid flex banners, plastic carry bags, and cups for social functions and academic programs.
- The University has implemented e-governance by adopting the paperless administration policy of Govt of Karnataka and the in-house management system. All correspondence including issue of circulars, invitations, notices, etc. is made through soft copy significantly reducing paper usage.
- Strict actions shall be taken to avoid dumping of civil construction waste, e-wastes, electrical appliance wastes, wooden furniture, glass windows, etc.
- A decentralized system shall be adopted by making mandatory that the waste has to be managed by the concerned departments, including administrative offices, shops, canteen, staff quarters, hostels, guest houses, etc. This should be monitored by the head or in-charge person of the respective departments/sections.
- Regularly at least once a month *Swachhata Abhiyan* shall be conducted by involving all the members of the campus, including staff and students. *Swachhata Abhiyans* or Cleanliness Drives to be organized beyond campus at beaches, villages, roadsides etc.

- Solid wastes including garden wastes are being converted through vermiculture methods and vermicompost-produced is used as biofertilizers in nursery gardens.
- Students are to be sensitized to avoid use of plastic for thesis / PG dissertation binding purposes.

#### **1.4 Policy for Reduction of Greenhouse gas emissions / Energy efficient lighting:**

- Most of the lights in buildings on the campus were replaced with LED bulbs. For all buildings, phase-by-phase incandescent lighting should be replaced with LED lighting. Fans with BLDC technology and ACs with inverter technology are energy efficient.
- Whenever additional lighting is required for the existing buildings and/or lighting for new buildings is done, only LED lighting shall be done.
- Appliances and electronics that earn the energy star label meet strict energy-efficiency specifications and help to save energy - LEDs and energy star-rated products help to save 75% energy, and last up to 25 times longer, than incandescent lighting.
- While procuring new devices/instruments and electronics, energy star appliances shall be processed for procurement.
- While replacing old electric appliances and electronics with new ones, only certified energy star appliances shall be used.
- The University, members of the faculty and students are encouraged to go for e-vehicles.
- All vehicles entering campus shall have valid Zero emission certification for their vehicles.

##### **1.4.1 Earthing:**

- All new constructions to have smart building features such as earthing, lightening arrestors, fire alarms, LEDs, sensors etc.
- Earthing saves energy since there is no chance of extra usage of power due to overloading.
- The proper functioning of the earthing shall be monitored. A blueprint of earthing shall be prepared so as to locate them and check them whenever required.
- Lightening arrestors shall be installed on all buildings.

#### **1.5 Policy for Energy Management / Energy Efficient Buildings / Renewable Energy Usage**

- Energy management is fundamental for saving energy and the environment in view of shrinking supply of non-renewables and rising energy costs. It makes the campus self-

sustained for electricity and also enables generating revenue by channeling excess electricity to the grid.

- The solar power panel on the rooftops of University buildings that have been installed shall be regularly monitored for optimal performance.
- Gradually, all the buildings on the campus shall be installed with solar panels to harvest solar energy to the utmost and make the campus self-sustained for its electricity requirements.
- The solar hot water systems installed at hostels, guest houses, staff quarters etc., shall be regularly monitored and maintained to reduce electricity costs.

#### **1.5.1 Solar street lights:**

- The University, being located on the coastal belt, receives ample sunlight throughout the year that ensures tapping solar energy. Solar power is used for illuminating streets and other public places, thus conserving electricity.
- The monitoring and maintenance of the existing street lights on the campus shall be regularly done.
- Phase by phase, other parts of the campus shall be installed with outdoor solar lighting solutions powered by an in-built battery, PV panels, smart sensors, and LED lights, integrated into one compact unit.

#### **1.6 Policy for e-waste management**

- The e-wastes that are generated shall be collected and stored in a safe room and disposed of scientifically from time to time.
- The buyback system shall be adopted for laboratory devices/ instruments, that are not repairable.
- Empty toners, cartridges, computers, and electronic items shall be legally sold to scrap vendors to ensure their safe transport and recycling.
- To the extent possible, laboratory and electronic devices such as computers that crossed the warranty period shall be repaired for continued usage until they are functioning.

#### **1.7 Policy for Biomedical waste management:**

- Biomedical waste generated from Health Centre and various laboratories particularly from life science departments, including animal houses shall be handed over to an authorized agency that takes the responsibility for collection and its scientific disposal.

- Staff, research scholars, and students who conduct biological work and generate biomedical waste shall be trained in biomedical waste management prior to starting their research.
- Bio-medical waste management and disposal shall be carried out in accordance with the Bio-Medical Waste (Management and Handling) Rules, 1998, MoEF, Gov. of India
- An agreement shall be entered into with local agencies for biomedical waste management.

## **1.8 Policy for Water Conservation / Water Treatment / Water Pollution Control**

- In addition to the existing rainwater harvesting systems, all the buildings on the campus are to be used incrementally for rainwater harvesting from rooftop catchments.
- The treated water from sewage treatment plants may be used for campus gardening and harvested rain-water should make the University self-sufficient even during the summer.
- The landscape of the campus is ideal for the construction of more check dams and bunds, effective ways of controlling soil erosion and resource utilization for replenishment and recharge of groundwater.
- Regular monitoring of leakage of taps and immediate action taken to repair in case of leakage is needed.
- The maintenance of the beauty of the campus landscapes can also be done with plantation of native, drought-tolerant plants so as to minimize water usage for gardening.
- Reducing water consumption and installation of water efficient devices such as faucet aerators, high-efficiency dual flush toilets, Fill Cycle diverters, etc. significantly contributes to sustainable water management.
- Quarters residents to be encouraged to opt for water-efficient devices while replacing or purchasing household items.
- Sewage treatment plants set up for sewage and wastewater treatment at men's and ladies hostels to be monitored regularly.

## **1.9 Policy for Waste management / Waste Disposal**

### **1.9.1 Solid waste management:**

- The major solid wastes generated include paper, cardboard, plastics, textiles, leather, yard wastes, wood, glass, metals, special wastes (bulky items, consumer electronics, white goods, batteries, oil, tires, etc.), and household hazardous wastes) which shall be properly

managed taking into consideration avoidance of emission of greenhouse gases, environmental pollution, and garbage.

- The first priority shall be given to the reduction of waste generation with students and staff being educated on proper waste management practices through awareness campaigns, circulars on notice boards, poster displays, etc.
- Waste shall be collected on a daily basis from various sources and separated as dry and wet waste with color-coded dustbins for different types of waste: green for wet waste and blue for solid waste.
- Quantification/assessment of waste generated by Departments/Hostels/Canteen/Guesthouses to be carried out.
- One or few housekeeping personnel shall be designated to collect the garbage separately and take the responsibility of sending wet (organic) wastes for composting/biogas production and dry waste to recycling centers.
- Recyclable waste materials like plastic, papers, boxes, and others may be sold out to scrap vendors from time to time.
- The manure (compost) produced from wet wastes by vermicomposting / pot-composting shall be used for campus gardening. Excess manure so produced shall be sold to generate revenue for the University.
- A good amount of revenue can be generated by scientific waste management that can be used to pay the housekeeping personnel and maintenance of the biogas plant.
- There shall not be scope for the burning of any kind of waste and landfilling of wastes has to be avoided as much as possible or completely.

#### **1.9.2 Liquid/inorganic waste management:**

- Improper handling of liquid waste can be disastrous for the environment and cause several different types of pollution. Surface water pollution can occur when liquid waste contaminates a water supply and changes its chemical composition. This can have grave effects on drinking water for both humans and animals, as well as disrupt aquatic ecosystems. Therefore, proper liquid waste management is essential.
- The wastewater (with chemicals) from laboratories shall be made to pass through a concealed pipeline into a soak pit set and filtered water used for non-potable usage such as watering trees.
- Storage and used glass chemical containers shall be collected at a site designated for the same for proper disposal or recycling.

- The treated effluents through waste management by sewage treatment plants shall be used for greening the campus, through organic manure.
- Wastewater treatment plants are installed in hostels and shall be extended to staff quarters, phase by phase.
- Liquid waste from toilets, bathrooms, kitchens and laboratories are connected to the leach pits in the respective buildings.

### **1.9.3 Organic Waste Management:**

- Organic waste (kitchen) generated particularly in hostels, canteen, and guest houses shall be used to produce biogas, reduce greenhouse gas emissions and the risk of pollution to waterways.
- Animal dung, food scraps, and crop residue that are generated /available on the campus shall be used as raw materials for biogas production.
- Biogas plants shall be installed in the hostels, guest houses and canteen where 5 sufficient organic wastes are generated. The by-product of the biogas generation process is enriched organic digestate, which accelerates plant growth and resilience to diseases. The digestate generated shall be used as manure for maintaining the garden on the campus.
- One or two garden workers shall be trained to operate and maintain biogas plants. Where full-fledged biogas plants are installed, qualified/ trained personnel shall be appointed for the operation and maintenance of biogas plants.

