12

SUSTAINABLE DEVELOPMENT GOAL

RESPONSIBLE CONSUMPTION AND PRODUCTION

THE Impact Rankings | Institutional Evidence Report

SDG 12 TARGETS

12.1 Sustainable consumption & production framework

12.2 Sustainable use of natural resources

12.3 Halve food waste

12.4 Sound management of chemicals & waste

12.5 Reduce waste generation

12.6 Corporate sustainability practices & reporting

12.7 Sustainable public procurement

12.8 Awareness of sustainable lifestyles

12.a Scientific & technological capacity

12.b Monitor sustainable tourism

12.c Rationalise fossil-fuel subsidies

GOAL 12 11 TARGETS

Responsible Consumption and Production

Sathyabama Institute of Science and Technology

(Deemed to be University)

Chennai, Tamil Nadu, India

Table of Contents

1. Institutional Overview **2**

2. Metric 12.2 – Operational Measures **2**

12.2 Policy Framework – Environmental and Sustainability Policy 2

12.2.1 Policy on Ethical Sourcing of Food and Supplies 2

12.2.2 Policy on Waste Disposal – Hazardous Materials 3

12.2.3 Policy on Waste Disposal – Measurement of Waste Sent to Landfill and Recycled 3

12.2.4 Policy on Minimisation of Plastic Use 4

12.2.5 Policy on Minimisation of Disposable Items 4

12.2.6 Extension of Policies to Outsourced Services 5

12.2.7 Extension of Policies to Outsourced Suppliers and Supply Chain 5

12.2.8 Purchase Policy – Sustainable Procurement 5

3. Metric 12.3 – Proportion of Recycled Waste **6**

4. Conclusion **7**

1. Institutional Overview

Sathyabama Institute of Science and Technology (Deemed to be University), Chennai, has a 140-acre campus. Its approach to SDG 12 is set by approved institutional policies: the Environmental and Sustainability Policy, the Policy on Waste Management (Edition 4, revised May 2024), Environment Friendly Practices (Edition 4, revised May 2024), the Food Policy (Edition 3, revised May 2024) and the Purchase Policy. These are put into practice by the **Centre for Waste Management (CWM)**, established in 2011 in collaboration with the National Solid Waste Association of India, and are monitored through an internal Waste Audit Committee and annual external audits.

Key facilities on campus include a 1.5 MLD Sewage Treatment Plant whose treated water is reused for gardening, landscaping and toilet flushing; a 1-tonne biogas plant that runs on food waste; a pilot biodiesel unit that converts waste cooking oil from the mess into fuel for campus buses, generators and pump sets; and segregated collection systems for solid, plastic, biomedical and electronic waste.

EVIDENCE

- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf
- **Green Campus and Circular Economy Initiatives:** https://www.sathyabama.ac.in/node/1981

2. Metric 12.2 – Operational Measures

12.2 Policy Framework – Environmental and Sustainability Policy

The Environmental and Sustainability Policy was reviewed by IQAC, approved by the Executive Council, and is due for review on 2 July 2029. It commits the university to a waste hierarchy of reduce, reuse, recycle, recover and responsible disposal; to sustainable procurement and environmentally responsible purchasing; to restricting single-use plastics and promoting reusable materials and sustainable packaging; and to regular monitoring, green and energy audits, and sustainability reporting. It provides the overarching framework for every submetric below.

EVIDENCE

- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf

12.2.1 Policy on Ethical Sourcing of Food and Supplies

Ethical sourcing at Sathyabama is covered by two policies. The **Food Policy** (Edition 3, created 21 June 2018, revised 29 May 2024) commits the university to buying food that is farmed and harvested in an environmentally friendly way from the local area. It specifies that meat is purchased only from farms that meet defined welfare standards, with organically certified meat preferred as it becomes available, and that organic vegetables are grown on a local farm for the staff and student canteens.

For goods and services, the **Purchase Policy** states that sustainability is one of the institution's core values. Every procurement must consider social and environmental impact and follow responsible consumption principles, and vendors are expected to be responsibly sourced and to use environmentally friendly practices.

EVIDENCE

- **Sathyabama Food Policy (Edition 3, 2024):** https://sist.sathyabama.ac.in/download/FoodPolicy.pdf
- **Purchase Policy:** https://sist.sathyabama.ac.in/download/iqac/purchase_policy.pdf

12.2.2 Policy on Waste Disposal – Hazardous Materials

Hazardous waste is managed under the Policy on Waste Management in line with national regulations. **Biomedical waste** from Sathyabama Dental College and Hospital is segregated at source into colour-coded containers (yellow, red, blue and white), with separate bins for infectious waste. It is handed over to an authorised agency, GJ Multiclave (India) Pvt. Ltd., Adyar, Chennai, under the Bio-Medical Waste Management Rules, 2016, and doctors and paramedical staff are trained in correct segregation.

E-waste such as computers, batteries and electronic equipment is inventoried, stored safely and handed over only to authorised recyclers, with records maintained in Form-2 for the State Pollution Control Board under the E-Waste (Management) Rules, 2016. The university has signed an MoU with VANS Chemistry Pvt. Ltd. for safe dismantling and training, and it runs awareness programmes on e-waste hazards. Refurbishment and reuse of equipment are encouraged before disposal.

EVIDENCE

- **Policy on Waste Management (Edition 4, 2024):**
https://sist.sathyabama.ac.in/download/WasteManagementPolicy.pdf
- **Environment Friendly Practices (Edition 4, 2024):**
https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf

12.2.3 Policy on Waste Disposal – Measurement of Waste Sent to Landfill and Recycled

The Policy on Waste Management (Edition 4; first issued 28 November 2014, revised 29 May 2024) treats waste as a resource and sets a defined route for each stream so that material is kept out of landfill wherever possible. Paper and cardboard are sold to vendors in exchange for recycled paper; metal is sold to scrap dealers; recyclable glass is reused; plastic covers are sold to recyclers who convert them into granules; and mess food waste, about 41,250 kg a year, is diverted as pig feed, with a portion used for research at the CWM. Only residual, non-recyclable waste is handed over to the Greater Chennai Corporation.

Waste is measured through a structured audit system. An internal Waste Audit Committee nominated by the Vice Chancellor inspects sites and verifies records, named heads maintain data for food waste (mess supervisor), wastewater (STP head) and e-waste (Systems Administrator), and an authorised external agency carries out an annual waste audit. The most recent Energy, Environment and Green Audit was conducted in 2024 by NIN Energy India Pvt. Ltd.

EVIDENCE

- **Policy on Waste Management (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/WasteManagementPolicy.pdf
- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf
- **Energy, Environment and Green Audit Report 2024:** https://sist.sathyabama.ac.in/download/GreenAudit.pdf

12.2.4 Policy on Minimisation of Plastic Use

The Environmental and Sustainability Policy restricts single-use plastics and supports plastic-reduction campaigns towards a plastic-free campus, and the Policy on Waste Management discourages plastic carry bags, PET bottles, milk packets and food containers on campus. In practice, the university avoids polythene covers, plastic bottles and plastic cups, and it has installed water coolers and four 10,000-litre RO plants so that students and staff do not need packaged water. Plastic that does enter the campus is segregated: plastic covers and milk packets are recycled into granules, and PET bottles are reused in sustainable architecture research and model making.

EVIDENCE

- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf
- **Policy on Waste Management (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/WasteManagementPolicy.pdf
- **Green Campus and Circular Economy Initiatives:** https://www.sathyabama.ac.in/node/1981

12.2.5 Policy on Minimisation of Disposable Items

The Environmental and Sustainability Policy places reduction and reuse at the top of the university's waste hierarchy and promotes reusable materials and sustainable packaging in place of disposable items. Disposable plastic cups, bottles and covers are avoided across the campus, and purchasing decisions are expected to consider repair and reuse options before new items are bought. Equipment is refurbished and reused wherever possible before it is treated as e-waste, and the CWM's organic pots made from food waste replace disposable polythene bags for distributing saplings.

EVIDENCE

- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf

12.2.6 Extension of Policies to Outsourced Services

Sathyabama's waste and sustainability commitments extend to the external agencies that deliver its services. Biomedical waste may be handled only by the authorised agency GJ Multiclave (India) Pvt. Ltd., e-waste only by authorised recyclers such as VANS Chemistry Pvt. Ltd., and audits are performed by accredited external auditors. Sathyabama also works with partners including WasmanPro Environmental Solutions and Transenergitics on waste management strategy. Under the Purchase Policy, services such as maintenance and repairs are procured through the same sustainability-led process as goods, with recurring services placed under one-year Annual Maintenance Contracts.

EVIDENCE

- **Policy on Waste Management (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/WasteManagementPolicy.pdf
- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf
- **Purchase Policy:** https://sist.sathyabama.ac.in/download/iqac/purchase_policy.pdf

12.2.7 Extension of Policies to Outsourced Suppliers and Supply Chain

Sathyabama's sourcing standards apply to its suppliers as well as to internal decisions. The Purchase Policy requires vendors to be responsibly sourced and to follow environmentally friendly practices, and, suppliers must meet green standards before they are approved. The Purchase Policy prefers original manufacturers and authorised dealers, requires valid registration and tax credentials, and sets minimum supply experience for higher-value orders. The Food Policy extends these expectations to food suppliers through its local-sourcing and animal-welfare requirements.

EVIDENCE

- **Purchase Policy:** https://sist.sathyabama.ac.in/download/iqac/purchase_policy.pdf
- **Sathyabama Food Policy (Edition 3, 2024):** https://sist.sathyabama.ac.in/download/FoodPolicy.pdf

12.2.8 Purchase Policy – Sustainable Procurement

The Purchase Policy applies to all departments, schools, research centres and administrative offices, and covers equipment, chemicals, stationery, machinery, software, hardware and services. It affirms sustainability as a core institutional value and requires procurement to consider social and environmental impact. Purchases are evaluated by Department, Central and Scrutiny Committees rather than by individuals; quotations are required according to value (three for purchases of Rs. 10,000–50,000 and six firms for purchases above Rs. 50,000); goods are inspected on receipt and entered in stock registers; repeat orders are not permitted; a Purchase Order Register is mandatory; and internal audits are held every six months. All purchases are ratified by the Finance Committee and the Board of Management, which ties buying to genuine, budgeted need.

EVIDENCE

- **Purchase Policy:** https://sist.sathyabama.ac.in/download/iqac/purchase_policy.pdf

3. Metric 12.3 – Proportion of Recycled Waste

Most of the waste generated on Sathyabama's campus is recycled, reused or recovered rather than sent to landfill. Food waste also powers a 1-tonne biogas plant, commissioned on 14 September 2022, which converts one tonne of food waste into 80–100 cubic metres of biogas and replaces about three LPG cylinders a day in the campus kitchens. Table 1 shows what happens to each main waste stream, with the quantities recorded in the university's published policies and reports.

Table 1: *How Sathyabama recovers its main waste streams*

Waste stream	Quantity and scope	What happens to it	Where it is documented
Food waste from the mess	About 41,250 kg a year	Goes to a pig farm as feed; part is used for CWM research and the biogas plant.	Environment Friendly Practices; Green Campus webpage
Paper, dried leaves and garden waste	About 804 kg a year	Composted and recovered instead of being thrown away.	Policy on Waste Management
Used cooking oil	15,000–20,000 litres a year kept out of drains and landfill	Turned into biodiesel that runs five campus buses, generators and pump sets.	Biodiesel webpage;
Sewage	Treated in a 1.5 MLD plant on campus	The treated water is reused for gardens, landscaping and toilet flushing.	Environment Friendly Practices
Paper and cardboard	Newspapers, magazines and cardboard	Sold to vendors in exchange for recycled paper.	Policy on Waste Management
Metal	Old steel chairs, scrap cupboards and racks	Sold to scrap dealers for recycling.	Environment Friendly Practices
Plastic	Kept in separate bins, away from general waste	Plastic covers and milk packets are recycled into granules; PET bottles are reused in architecture research and model making.	Environment Friendly Practices
E-waste	Computers, batteries and electronics (Form-2 records)	Handed over only to the authorised recycler, VANS Chemistry Pvt. Ltd.	Environment Friendly Practices
Biomedical waste	From the Dental College and Hospital, in four colour-coded bins	Collected for safe treatment by the authorised agency GJ Multiclave (India) Pvt. Ltd.	Policy on Waste Management

EVIDENCE

- **Environment Friendly Practices (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/EnvironmentFriendly.pdf
- **Policy on Waste Management (Edition 4, 2024):** https://sist.sathyabama.ac.in/download/WasteManagementPolicy.pdf
- **Biogas and Biodiesel Facilities:** https://www.sathyabama.ac.in/node/1983

4. Conclusion

Sathyabama Institute of Science and Technology approaches responsible consumption and production as an everyday operational commitment backed by research. Approved and regularly revised policies set clear rules for sourcing, purchasing, plastic and disposable items, and hazardous and general waste. Campus facilities turn waste into resources: food waste becomes animal feed and biogas, used cooking oil becomes bus fuel, sewage becomes water for gardens and flushing, and plastic becomes granules for new products. Through the Centre for Waste Management, annual audits and published sustainability reports, the university measures what it consumes and discards, shares the results openly, and continues to build a campus that uses resources responsibly.