KALASALINGAM
ACADEMY OF RESEARCH AND EDUCATION
(DEEMED TO BE UNIVERSITY)
Under sec. 3 of UGC Act 1956. Accredited by NAAC with "A++" Grade

THE - Impact Rankings 2026

SDG 12: Responsible Consumption and Production

Annual Report – 2023 to 2024

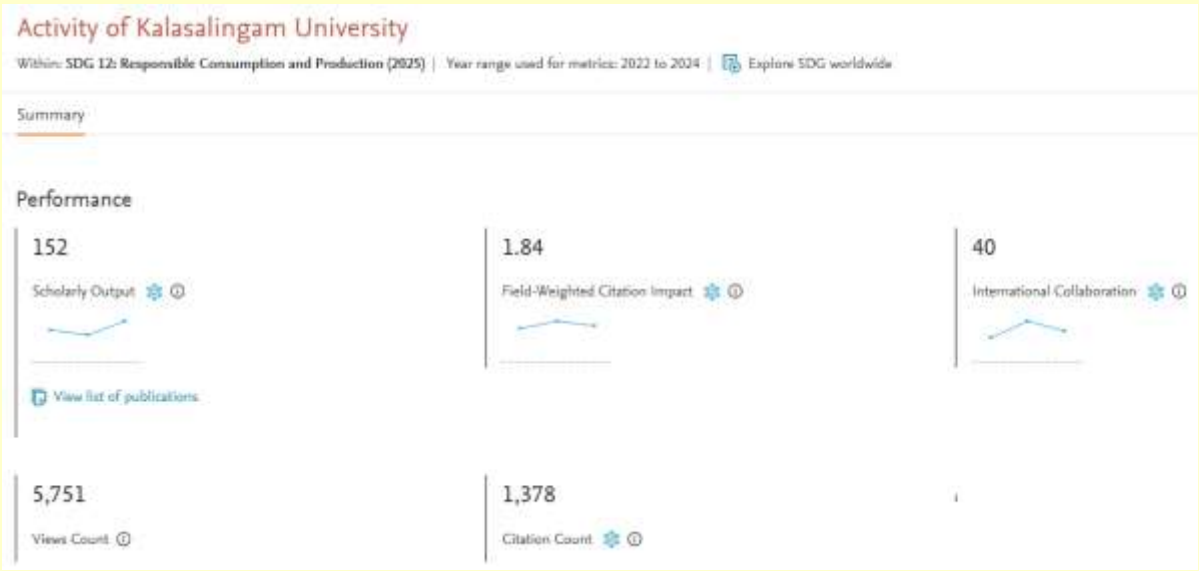
SDG 12 aims to ensure sustainable consumption and production patterns that minimize environmental impact, promote resource efficiency, and support long-term economic and ecological resilience. This goal emphasizes reducing waste generation, improving recycling systems, fostering circular economy practices, and encouraging responsible use of natural resources across all sectors.

Responsible consumption and production involve designing products and services with minimal environmental footprints, promoting sustainable procurement, reducing plastic and hazardous waste, and encouraging mindful consumer behavior. SDG 12 also highlights the need for transparent reporting, environmental compliance, and the adoption of clean technologies to reduce pollution and support sustainable operations.

Universities play a critical role in advancing SDG 12 by implementing eco-friendly campus policies such as waste segregation, recycling programs, green procurement, energy-efficient systems, and responsible resource management. They contribute through research on sustainable materials, waste-to-energy solutions, environmental monitoring, and circular economy innovations. Educational institutions also promote awareness through student-led sustainability initiatives, workshops, and community outreach programs on waste reduction and sustainable lifestyles.

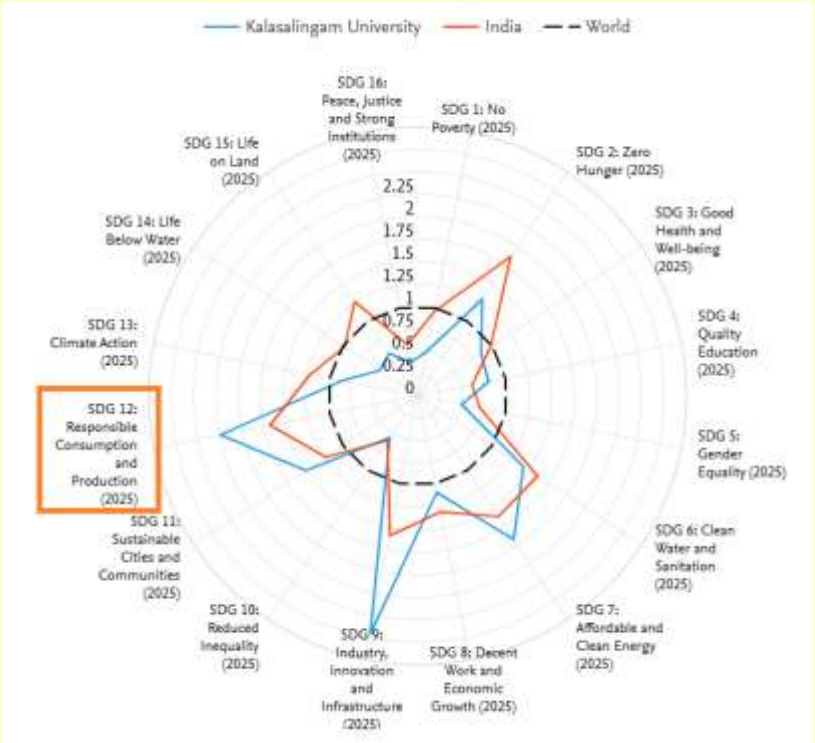
By integrating sustainability principles into operations, academics, and community engagement, universities help build environmentally conscious societies and accelerate the global transition toward responsible production and consumption patterns.

SDG 12: Research Metrics (SciVal)

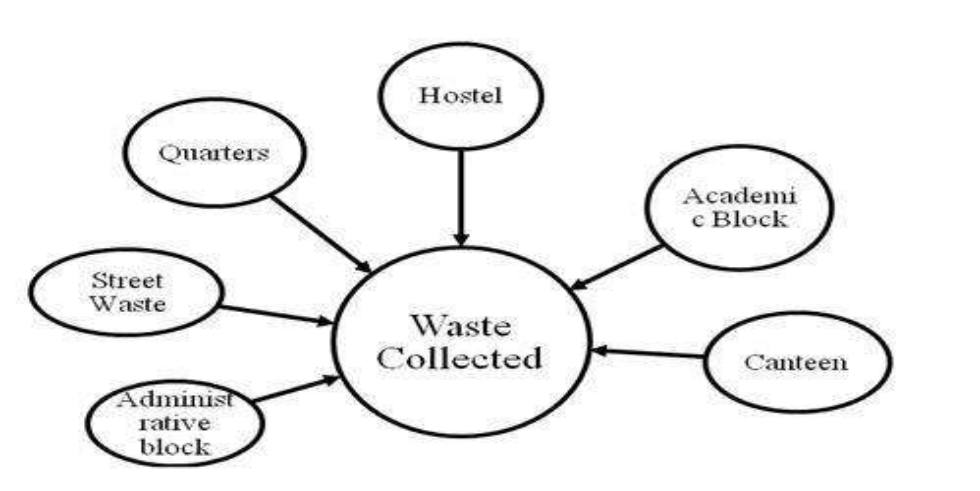


Relative Activity

The Relative Activity Index is defined as the share of an Institution's Scholarly Output in a SDG relative to the worldwide share of Scholarly Output in that same SDG.



The Institution has established a system for the management of various wastes produced in the campus, to provide a clean environment through the concept of (3R) Reduce,Recycle, Reuse which in turn creates wealth and also supports wellbeing of students, faculty and staff and to enhance the quality of life within the campus. All necessary facilities for the management of wastes are also in place. The wastes generated such as paper, cardboard, computers, electronic equipment, glass batteries, wood, concrete, agriculture and food wastes. Wherever reuse is possible, the university is committed to recycling those materials.



Vermicomposting

All degradable waste (except wood dust) collected from the bins, agriculture waste collected from the farm land and food waste collected from canteen and hostels are processed to form vermicompost. Before adding the agriculture waste in the mixture, it is shredded using the shredder (1.5 tons per hour fitted with a 3 HP Motor) available for this purpose. Then the mixture is undergoing microbial composting and vermicomposting. Cultivated earthworms are separated from vermicompost, marketized and utilized for the production of vermi wash. Produced vermicompost is value added with microbes and used in the agriculture farm of the institute and also vends to the local farmers at a nominal cost. The quality of the vermicompost was assessed and certified by the Department of Soils and Environment, Tamil Nadu Agricultural University. As an initiative of inclusive growth, farmers are given training on the procedure and the usage of the organic vermicompost.

Capacity of the shredder : 1.5 tons per hour fitted with a 3 HP Motor

Capacity of waste generated in the campus : 1.1 tons

Outcome: : 12 tons of compost

Processes involved in degradable, Solid Waste Management and the geotagged photos of collected waste, vermicompost yard, equipment and produced vermiwash and vermi biofertilizers are attached below.

3R Program: Pre incubation of Waste with Cow dung after shredding for microbial degradation.

Harvested Vermicompost, Packed and ready for sale to Farmers.

Vermicompost are certified as KARE-BIO Vermicompost

Water Recycling Program

STP – Adopting Green Policy:

Water sustains life on the planet; realizing this, a very systematic and sustainable approach towards cleaning and recycling water has been practiced at KARE for more than a decade now. Using advanced automatic SBR technique, not only the demands on the fresh water has been substantially reduced; rather the generated biomass has been effectively re-used as a source of organic manure for cultivation of various plant species alongside the foothills of the Western ghats. This practice has brought several laurels to the University such as UI Green Metric Award 2020 (2nd position among Indian Universities and 168th among World Universities) and 7th amongst cleanest Higher Educational Institution in the country by Swachh Campus awarded by

Government of India, MHRD in 2018. The clean and green practice at KARE, could set an example for other institutions believing and aiming towards sustainable development goals.

Adsorption Column (Rapid Sand Filter and Activated Charcoal Filter) Facility in the STP at Kalasalingam Academy of Research and Education, TN

Air Blower Pumps Facility in the STP at Kalasalingam Academy of Research and Education, TN

Sludge management

Energy produced by Solar Plant and Solar Street lights

To conserve electrical energy and to utilize it effectively, KARE has installed solar PV panels to the tune of 1124 kW in building rooftops. Power from solar PV panels shares about 45% of the total power consumption of KARE. As of now solar PV Panels generate about 39,10,216 kWh of energy. 4357 tons of CO_2 emissions are stopped, because of the installation of solar PV panels.

Solar Plant in KARE Campus

Greenhouse gas emission reduction program

Various greenhouse gas (GHG) emission reduction programs are followed by KARE to mitigate the environmental impact and promote sustainability to reduce Greenhouse gas emission. The institution has established a system for the management of various wastes produced in the campus, to provide a clean

environment through the concept of Reduce, Recycle, Reuse which in turn creates wealth and also supports wellbeing of students, faculty and staff and to enhance the quality of life within the campus and to the society. Wherever possible, the institution is committed to recycling those materials.

Here are some common programs and initiatives followed by KARE:

1. KARE is cutting down greenhouse gas (GHG) emissions within **Scope 1** by using biogas for heating. They are also reducing the need for electricity in cooling by using common **ventilation systems**. To lower emissions from transportation, the university operates common bus facility for faculty and staffs along with public transportation. Additionally, vehicle traffic within the campus is carefully controlled. These efforts help to minimize **transportation-related greenhouse gas emissions**, contributing to a cleaner and more sustainable campus environment. Additionally, solar panels on campus provide some of the energy needed.

2. KARE is situated in an area where a large **solar power plant** supplies electricity. This means that while KARE benefits from solar energy in the region, the electricity it uses isn't entirely purchased, the renewable is still involved in generating a portion of it. **(Scope 2)**

3. As part of the university's **zero waste program**, KARE aims to reduce emissions from solid waste. Through STP plan, the sewage water is utilized for garden irrigation and flushing the toilets. Through these initiatives, KARE is actively working to reduce its environmental impact and promote sustainability across various areas, including waste management, water usage, and transportation. **(Scope 3)**

Rainwater Harvesting

Rainwater Harvesting System near Homi. J. Bhabha Block / Block-II / Chemistry Lab