



RESPONSIBLE CONSUMPTION AND PRODUCTION

GOVERNANCE AND OPERATIONS

UCSI University supports Sustainable Development Goal 12 (Responsible Consumption and Production) through institutional policies and operational practices covering responsible procurement, waste management and resource efficiency across its campuses. The University implements procurement guidelines that promote ethical sourcing of food and supplies, requiring campus vendors and food operators to follow responsible sourcing and sustainability considerations.

Additionally, the University established waste management procedures that include the safe handling and disposal of hazardous materials, particularly those generated in laboratories and technical facilities. These procedures comply with national environmental regulations and are implemented through authorised waste contractors and internal operational protocols.

UCSI also implements waste monitoring practices that track the volume of waste generated, recycled and sent to landfill, supported by campus waste segregation initiatives. Furthermore, the university promotes the minimisation of single-use plastics and disposable items, encouraging reusable alternatives and responsible purchasing practices across campus operations.

These sustainability policies extend to outsourced service providers and suppliers, including food operators, equipment vendors, stationery suppliers and building contractors, through procurement and operational requirements. The University monitors waste performance across campus operations, with progress and sustainability initiatives communicated through institutional sustainability reporting.

TEACHING AND LEARNING

1. EDUPALM 2025: SHAPING TOMORROW'S PALM OIL ADVOCATES

EDUPALM 2025 was organised as a sustainability education initiative to address misconceptions and knowledge gaps around palm oil production and consumption. The programme aimed to strengthen understanding of responsible palm oil practices and empower youths to engage critically with sustainability issues. Nearly 70 participants from UCSI University and Universiti Putra Malaysia gained evidence-based knowledge on sustainable palm oil, supply chain responsibility and Malaysia's sustainability commitments.

Immediate outcomes included enhanced sustainability literacy and advocacy capacity, preparing youth to promote responsible palm oil practices. At a broader level, EDUPALM 2025 fosters informed consumption, supports sustainable industry practices and strengthens collaborative learning between universities and campaign partners. It also directly advances SDG 4, SDG 8 and SDG 17 by promoting responsible production and consumption, education, ethical economic practices and multi-stakeholder collaboration.



2. WORLD ECONOMY MODEL NEEDS CHANGING: EMBRACING THE CIRCULAR ECONOMY

The lecture on Circular Economy, organised by UCSI University and delivered by Prof Dato' Dr Ahmad Ibrahim, addressed unsustainable production and consumption patterns while promoting regenerative economic practices. The session aimed to raise awareness of designing products for longevity, repair and reuse, and turning waste into valuable resources to reduce greenhouse gas emissions and support climate action.

Immediate outcomes included increased understanding among participants of how circular economy strategies can mitigate carbon footprint and promote low-carbon solutions. At a broader level, the lecture also contributes to SDG 13 by encouraging sustainable economic practices, fostering climate-conscious behaviours and demonstrating how resource-efficient design can reduce environmental impact.



RESEARCH AND DISCOVERY

1. MODELING THE SIGNIFICANCE OF GREEN MANAGEMENT PRACTICES ON FOOD WASTE REDUCTION INTENTION AMONG SMALL RESTAURANTS

(Mitigation and Adaptation Strategies for Global Change, (2025). Asst Prof Dr Mohammad Nurul Hassan Reza)

Research on food waste away from home, particularly its quantification and environmental impact, has been extensive. However, studies focusing on the willingness of small restaurants to reduce food waste are scarce. Hence, this study aims to fill this gap by examining the impact of green management practices on food waste reduction intentions among small restaurants. Cross-sectional data (N = 802) were collected from small restaurants in various regions of China, using judgment sampling. An integrated approach of partial least squares structural equation modeling (PLS-SEM) and necessary condition analysis (NCA) was employed for data analysis. The results supported all the hypotheses, indicating a significant relationship between various green management practices, including green food procurement, green menu planning and cooking, green packaging for take-out, green cleaning and post-treatment, green kitchen and dining environments, and green management policy and food waste reduction intention. The implications of this study are essential for the owners and managers of small restaurants to improve their environmental performance and reduce food waste. This study suggests that embracing and implementing green management practices significantly impacts food waste reduction intention. The novelty of this study lies in its exploration of green management practices specifically tailored to small restaurants, thus contributing to the limited literature on sustainable practices in the food service industry. The originality of this study lies in its integrated application of PLS-SEM and NCA to simultaneously examine the sufficient and necessary conditions influencing food waste reduction intention, with a specific focus on green management practices implemented by small restaurants.

2. REAL WORLD EFFICACY OF ENRICHED (E)-CINNAMALDEHYDE EXTRACT-INFUSED CELLULOSE ACETATE-BASED ACTIVE PACKAGING FILM ON SELECTED FRESH-CUT FRUITS AND VEGETABLES

(Food Packaging and Shelf Life, Volume 49, (2025). Assoc Prof Dr Wong Chen Wai)

This study aimed to explore the real-world application of cellulose acetate-based active packaging film on fresh-cut fruits and vegetables preservation at room temperature. A total of six different fresh-cut samples were selected, namely 'Fuji' apple, 'Mas' banana, China celery, Iceberg lettuce, mung bean sprout and potato. The enriched (E)-cinnamaldehyde extract from cinnamon bark was the active ingredient incorporated into the active packaging to inhibit enzymatic browning and fungal growth. The active packaging demonstrated effectiveness in preventing browning of fresh-cut samples with low phenolic content (11.53 ± 1.33 – 31.66 ± 2.13 mg GAE/100 g FW), such as China celery, Iceberg lettuce and mung bean sprout for 3 to 5 days. The underlying observation revealed that (E)-cinnamaldehyde acted as a competitive PPO inhibitor, where its effect can be compromised by the presence of high concentration of phenolic substrates. In the meantime, the active packaging was effective to inhibit yeast and mold growth of all the fresh-cut samples by a week. *Aspergillus* spp., *Candida* spp., *Cryptococcus* spp., and *Fusarium* spp. were identified as the spoilage yeast and mold isolated from the selected fresh-cut samples. The validation of the cellulose acetate-based active packaging on fresh-cut fruits and vegetable preservation was corroborated by delaying the browning of low phenolic content samples and inhibiting fungal growth. In addition to reducing food waste, enhancing food safety and promoting sustainable consumption, the active packaging has achieved Technology Readiness Level 5, making it ready for demonstration on supermarket and vendor shelves.

COMMUNITY AND PARTNERSHIP

1. ARCHIVAL OF TRADITIONAL CHARCOAL PRODUCTION

Reimagining Charcoal was led by Collab UCSI to address sustainability challenges in Kuala Sepetang's traditional charcoal industry, balancing cultural heritage with environmental responsibility. The project explored sustainable innovations using local materials such as mangrove bark, dye, vinegar, shells and algae, aiming to reduce carbon footprint, empower the community and enhance value chains, supporting SDG 12.



Immediate outcomes included increase in awareness and capacity among local producers, students and stakeholders to adopt environmentally responsible practices. At a broader level, the project also promotes SDG 8 by supporting sustainable livelihoods in traditional industries and SDG 11 by preserving cultural heritage and fostering resilient, community-centered practices. Outputs included prototype products, knowledge-sharing sessions and strategies for sustainable, locally adapted charcoal production.



2. UCSI RECYCLING DAY: FROM TRASH TO CASH

UCSI Recycling Day is a monthly university-led initiative promoting responsible waste management and sustainable consumption among students, staff and the campus community, addressing challenges of improper disposal and resource inefficiency. Organised in partnership with Riiicycle Tech, the event leverages app-based and IoT-enabled waste tracking to incentivise recycling and demonstrate circular economy practices, supporting SDG 12.

Immediate outcomes included increased awareness and adoption of responsible disposal practices, as well as enhanced understanding of sustainable consumption and digital engagement. At a broader level, the initiative fosters a culture of environmental responsibility, strengthens community participation, and showcases innovative waste management solutions. It also advances SDG 4, SDG 11 and SDG 17 through collaboration between academia, technology providers and the wider community.



3. TOGETHER, WE CELEBRATE: MERDEKA AT PAVILION BUKIT JALIL

The event addressed sustainability challenges in the fashion and creative industries, focusing on overconsumption, waste and cultural heritage preservation. Organised by UCSI University, it aimed to integrate traditional batik with contemporary design, promoting responsible production, sustainable creativity and heritage conservation in line with SDG 12.

Immediate outcomes included enhanced student learning through experiential collaboration, increased public awareness of sustainable fashion and engagement with zero-waste creative practices. Outputs highlighted sustainable materials, heritage-based design and culturally inspired artworks. At a broader level, the initiative fosters sustainable fashion values, supports local craftsmanship and encourages responsible consumption. It also advances SDG 4, SDG 11 and SDG 17 by linking academia, creative industries and community stakeholders in promoting culturally informed, sustainable practices.

